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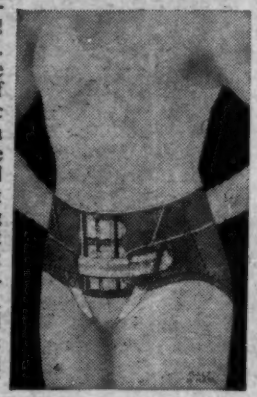

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 3 1948

A MESSAGE TO THE MEDICAL PROFESSION

FROM THE MINISTER OF HEALTH

On July 5 we start, together, the new National Health Service. It has not had an altogether trouble-free gestation! There have been understandable anxieties, inevitable in so great and novel an undertaking. Nor will there be overnight any miraculous removal of our more serious shortages of nurses and others and of modern replanned buildings and equipment. But the sooner we start, the sooner we can try together to see to these things and to secure the improvements we all want.

On July 5 there is no reason why the whole of the doctor–patient relationship should not be freed from what most of us feel should be irrelevant to it, the money factor, the collection of fees or thinking how to pay fees —an aspect of practice already distasteful to many practitioners. Yet it has been vital, if this is to be the new situation, to see that it did not carry with it either any discouragement of professional and scientific freedom or any unfair worsening of a doctor's material livelihood. I sincerely hope and believe we have secured these things. If we have not we can easily put that right.

The picture I have always visualized is one, not of "panel doctoring" for the less well-off, not of anything charitable or demeaning, but rather of a nation deciding to make health-care easier and more effective by pooling its resources—each sharing the cost as he can through regular taxation and otherwise while he is well, and each able to use the resulting resources if and when he is ill. There is nothing of the social group or class in this; and I know you will be with me in seeing that there does not unintentionally grow up any kind of differentiation between those who use the new arrangements and those who, for any reason of their own, do not. Let this be a truly national effort. And I, for my part, can assure you that I shall want vigilantly to watch that your own intellectual and scientific freedom is never at risk of impairment by the background administrative framework, which has to be there for organizing purposes, but in which your own active participation is already secure.

In this comprehensive scheme—quite the most ambitious adventure in the care of national health that any country has seen—it will inevitably be you, and the other professions with you, on whom everything depends. My job is to give you all the facilities, resources, apparatus, and help I can, and then to leave you alone as professional men and women to use your skill and judgment without hindrance. Let us try to develop that partnership from now on.

It remains only to wish you all good luck, relief—as experience of the scheme grows—from your lingering anxieties, and a sense of real professional opportunity. I wish you them all, most cordially.

ANEURIN BEVAN.

British Medical Association

ONE HUNDRED AND SIXTEENTH ANNUAL MEETING, CAMBRIDGE, 1948

President's Address

THE CHANGING FACE OF MEDICINE

BY

Sir LIONEL WHITBY, C.V.O., *M.C.*, M.D., F.R.C.P.

Regius Professor of Physic in the University of Cambridge

Once when Winston Churchill addressed the Royal College of Physicians on an occasion when he was guest of honour he laid emphasis on the importance of history in relation to current events, to wise policy, and to great decisions. In one of his characteristic aphorisms he said, "The more one looks back the further one can look forward." And so on this occasion, when we are within a short week of the inception of a great social experiment, when the administrative side of medicine—we hope not the practice of the art—will become the responsibility of the State, I have thought that we might look backward over the changed and changing face of medicine to see whether we can draw comfort from the past, inspiration and guidance for the future, and perhaps understand more clearly the train of the events which has led inevitably to a national medical service. I must, of necessity, set certain limitations. For, whereas time is restricted and patience exhaustible, medicine has been in existence for thousands of years and one cannot hope, nor is there need, to cover all the ups and downs of this vast period in order to establish my thesis. One could speak specifically about several aspects of change, such as the growth of knowledge, the character of practice, the fashions and fads of various generations, or the status and freedom of the profession. In the time at my disposal I shall touch on all these points, but I wish mainly to take a bird's-eye view of the state of medicine during certain periods, looked at through the eyes of men famous in the Cambridge Medical School, and then to pass on to wider fields as we come more nearly to our own times.

At the outset it must be realized that though medicine reached a high level in many early civilizations its practice shared in the retrogression which was common to all education during the Dark Ages after the fall of Rome. It is not therefore until the Renaissance period that any clear account can be found.

In the fifteenth century Linacre (1458–1524), of St. John's College, rendered great services to English medicine. He was concerned with picking up the threads of learning which had been neglected for so long. His accurate preparation of Greek texts was the first step towards putting medicine on a sound basis after the decadence and backwardness of the Dark Ages.

The Sixteenth Century

John Caius (1510–73) was likewise a great student of manuscripts and was instrumental in reviving the study of anatomy. He did more than this, however, in that he was a pioneer in the publication of observations which were original and not mere compilations of the views of other authorities. He may indeed be regarded as having written the first medical treatise in English. During his time, the sixteenth century, the surgeons had not yet risen to a dignified and trusted place; they still combined their craft with barbering and dentistry, and when the surgeons claimed the right to give internal remedies for sciatica, syphilis, or any kind of ulcer or wound John Caius was one of the most vigorous defenders of the privileges of the physicians. It is instructive to appreciate that the "closed shop" principle is not really a new creed peculiar to the political times in which we live to-day. For many centuries the physicians held a monopoly of practice; they were jealous and stubborn of what they believed to be their rights.

Langdon-Brown (1946) has coupled William Gilbert (1540–1603) with "the dawn of experiment." Gilbert, physicist and physician, was a champion of the experimental method and an outstanding enemy of all who relied merely on the authority of ancient traditional names. He stimulated experimental science in England long before Bacon began to make his theoretical contribution to the subject. He is said to have spent as much as £5,000 of his own money in his researches. Gilbert's eminence as a physicist, shown especially in his classical work, *De Magnete*, has tended to overshadow his reputation as a physician. Yet he was President of the Royal College of Physicians and an active member of the committee of the College which was concerned with the issue of an authoritative pharmacopoeia. Gilbert realized how many of the nostrums, prescriptions, and remedies of the day were mediaeval and survivals even from the days of witchcraft; most had literally no claim to rational use. It is a pity that he did not see the final publication of the pharmacopoeia, for it can be assumed that he would not have sanctioned the inclusion of the "Emplastrum divinum" of Nicholaus, which was composed of powdered lodestone made up with wax, oil, litharge, and sundry spices. This, by virtue of the lodestone, was said to draw humours and headaches from within. Gilbert's therapeutic views were based upon his clinical results. For example, for the treatment of anaemia he placed great faith in iron steeped in sharpest vinegar and afterwards dried. Gilbert's period witnessed the great renaissance of medicine in England. At this time the profession of physician was becoming slowly disentangled on the one hand from that of the clergyman and on the other from the trades of apothecary and barber.

It was at this time that Henry VIII was inspired or encouraged to set the profession of medicine on a sure foundation. He gave a Charter to the Royal College of Physicians and founded chairs of physic or medicine in a number of universities. Humphry Rolleston (1932) says: "The Regius Chair of Physic at Cambridge was founded in 1540, about the time of the dissolution of the monasteries, by Henry VIII, who has often been called that munificent donor of other people's property."

But despite the advance in learning both physicians and surgeons at this time laid claim to a knowledge which can only be described as pretentious, ponderous, and peremptory, so that little or nothing was done within the profession

to overcome what was still the chief impediment to progress—namely, the intimate association of medical science with astrology. Upon this outlook Gilbert's influence was salutory because of his insistence upon observation, experiment, and deduction and his scorn for reliance upon nothing more than ancient or astrological authority.

The Seventeenth and Eighteenth Centuries

Harvey's (1578–1657) great work on the application of physical principles to physiology may be regarded as a natural extension of Gilbert's experimental methods. In Cambridge the period of the early seventeenth century was marked by the appointment of Francis Glisson (1597–1677) to the regius chair. Glisson's name is familiar to every medical student who reaches the stage of the second M.B. He was a master in the art of exact clinical observation and in the accurate study of morbid anatomy. He began a phase of medicine which was to last for more than two centuries, a period of individual medicine when the physician, with no more equipment than his five senses, his experience, his instinct, and his knowledge, would deduce the diagnosis from acute and penetrating observation and would prescribe such remedies as were known or were believed to be effective. Glisson's name will be familiar to all who are interested in medical history because of his original observations on rickets, or *morbus anglicorum*, and for his classical work on the anatomy of the liver.

One can pass naturally from Glisson to the eighteenth century, the period of the gold-headed cane, which signified the rise in wealth and in the social status of the physician. In Cambridge the medical trend of the century was represented, not by the two somewhat colourless regius professors who occupied the chair during almost the whole of a hundred years, but by William Heberden (1710–1801) the protagonist of a rational system of materia medica and a fine example of the best traditions of clinical medicine. He likewise would not pander to mere tradition and was critical of the views of even distinguished men. For example, his opinion upon Sydenham's belief that jaundice was due to hysteria was, "No reasonable deference to this accurate observer could make anyone very much doubt that he was mistaken."

Heberden flourished during the time of the first professorships in anatomy and chemistry at Cambridge. He must have seen and scoffed at the medical cabinet of Vigani, the chemistry professor, which may still be seen at Queens' College and which contains such late seventeenth-century remedies as dragon's blood, balm of Gilead, viper, scorpion, and the claws of crabs.

The Nineteenth Century

The end of the eighteenth century was marked by a crucial epoch-making adventure in experimental medicine which was a prophetic prelude to the triumphs of the nineteenth and twentieth centuries, and which even to-day stands out as an unprecedented achievement in preventive medicine. I refer to Edward Jenner's successful cross-immunization experiments with cowpox, the application of which has almost banished from this country a disease which at one time had an appalling mortality and caused disfigurement and disability to thousands. This experiment by a general practitioner, which we now accept as a rational piece of work, was far in advance of the times and was inspired by shrewd clinical observation, by one who knew nothing of all the immunological and bacteriological knowledge which we possess to-day When one comes to the mid-nineteenth century Jenner's vision begins to be seen in the right perspective. From then onwards there has been, with ever-increasing rapidity, a greater and greater development of the scientific aspect of medicine until to-day we are at a stage, albeit not a final one, when no one man can hope to be highly skilled in more than one small corner of the fabric of medicine.

From the middle of the nineteenth century onwards many causes of disease were brilliantly revealed with the work of Pasteur, Koch, and others in the bacterial field; of Ross, Bruce, and Leishman in the realm of parasites; of Mellanby, Gowland Hopkins, and others with vitamins; of Harington, Banting, Best, Dodds, and others with internal secretions; of Ehrlich, Domagk, Fleming, Florey, and others with specific chemotherapy. In parallel there has grown up an immense accumulation of knowledge of the habits and mode of life of parasites and of the complex science of immunology which has elucidated some of the mechanisms by which the body eliminates an infection, some of the methods by which the protective powers of the body can be increased, and some of the means by which organisms and parasites exert their pathogenic action.

The co-ordination and application of all this knowledge greatly changed the face of medicine between the closing years of the nineteenth century and the opening and subsequent years of the twentieth. Not much more than fifty years ago, as I have shown, certain drugs and treatments were being used with much art, with some skill, and a certain success, but only for the alleviation of the symptoms of a disease. There was little or no knowledge of the action of the drugs, if any, on the primary cause. With the discovery of the causes of disease the way became open for rational therapy based on animal experiment, and this has yielded us the handsome therapeutical dividends which we draw to-day.

Yet there were some in the pharmacopoeial period, the period when nursing and nature were largely responsible for cure, who were by no means satisfied with the state of medical knowledge. Heberden in the eighteenth century in his *Commentaries* remarks upon the difficulty of ascertaining the powers of medicine, and laments, as did Hippocrates, the length of time necessary to establish medical truths. He says: "Very few remedies have justified promises. However, the title of 'specific' may be justly claimed for Peruvian bark for ague, quicksilver for venereal disorders, sulphur for itch, and opium for some spasms." Oliver Wendell Holmes was more outspoken in his appreciation of the limitations of medicine even as late as the mid-nineteenth century when he said: "If with two exceptions, morphia and anaesthesia, the whole materia medica as now used could be swept to the bottom of the sea it would be all the better for mankind and all the worse for the fishes." And there were some who had a foot in both ages and achieved a place in both.

Humphry Rolleston (1929), writing the life of my famous predecessor, Sir Clifford Allbutt, says: "During the 89 years of his life he witnessed changes in medicine which would seem never likely to be rivalled." This might be true were we not aware of how much the speed of advance has quickened since Allbutt's death in 1925. Allbutt was born before the introduction of anaesthesia; he saw the development of bacteriology and immunology, of antiseptic and aseptic surgery, of Ehrlich's pioneer work on chemotherapy, including the perfection of salvarsan; and he saw the creation of the nursing profession, astonishing progress in public health and preventive medicine, the discovery of *x* rays and radium and of vitamins, as well as their application to medical practice, the development of neurology, cardiology, biochemistry, endocrinology, and specialism in many spheres. At the end of Allbutt's time, changes in the face of medicine began to overshadow the individual and to substitute an ever-enlarging scientific team.

Achievements of the Past Decade

This will be apparent if we no more than glance at some of the achievements of the past ten years. Almost all are extensions of the work which Allbutt saw in its fundamental early stages. First come to mind the advances in chemotherapy, the science fathered by Ehrlich in the early years of the century, which has enabled us to control so many bacterial and parasitic diseases. It is little more than ten years since the first sulphonamide gave us a powerful influence over streptococcal, meningococcal, gonococcal, and *Bact. coli* infections. Exploitation of the sulphonamide group led to potent specific measures for the treatment of pneumonia, "the captain of the men of death," and bacillary dysentery—a disease of immense military importance when armies have to fight in tropical and subtropical climates.

During the past decade Fleming's (1929) discovery of penicillin was perfected by co-ordinated team-work, thereby making available for everyday use an agent which comes very close to Ehrlich's dream of a non-toxic active antibacterial agent, one of the most powerful remedies against the commonly mortal staphylococcal infections, a substance which greatly reduced the mortality and morbidity from wound sepsis during war, and a material which succeeds with considerable frequency in bacterial endocarditis—a disease which hitherto has defied all methods of control quite apart from cure. Following this a vast amount of organized research into the antibacterial properties possessed by other moulds and micro-organisms has led to the introduction of streptomycin, which is a definite step forward in the treatment of acute forms of tuberculosis. And among the important successes in chemotherapy have been the advances made in the prophylaxis and treatment of protozoal disease.

In the Far-Eastern campaigns, where casualties from disease were at one time ten times as numerous as those caused by lethal weapons, the medical services can be considered to have been the most important branch of the general staff. With the world quinine supplies largely in enemy hands the work of our chemists in producing and perfecting the antimalarial drugs—mepacrine, pamaquin, and, later, paludrine—can be said virtually to have won the Burma campaign. The shade of Ehrlich must have rejoiced at these successes, for chemotherapy may be said to have been born on the day on which Ehrlich's mind connected two simple facts—that methylene blue stained the malaria parasite and that methylene blue was harmless to the human body. Ehrlich tried methylene blue for the treatment of malaria but obtained only a hint of success. Nevertheless the chemical structure of mepacrine is more closely related to methylene blue than to quinine. Thanks to chemotherapy and efficient methods of immunization many of the major horrors of war were largely controlled. In the 1939–45 war the incidence of typhoid and typhus was commendably low, tetanus was rare, and the wards were no longer filled with the stink and corruption of gangrene and sepsis. Indeed, somatic recovery, no longer retarded by chronic infection, sometimes outpaced psychological repair.

The Atomic Age

We live in an epoch-making age, the atomic age, and perhaps at the cross-roads of civilization. Nuclear physics, exploited for destructive purposes with incredible rapidity under the stimulus of war, promises immense possibilities for the advancement of medicine—what Chadwick (1947) has called a "safe" development of atomic energy because the materials which are required can be made in an apparatus incapable of being used for destructive purposes. With quite small apparatus the transmutation of elements is a commonplace, and radioactive isotopes of almost any element can be obtained. These isotopes, used as so-called tracers, offer a field for the study of body processes, body metabolism, and organ function which will take many years to exhaust, whilst the therapeutic applications by reason of the profound biochemical changes which rays bring about in body cells may eventually reveal the chemical nature of the differences between the metabolism of normal and malignant cells.

This work links up with another horror of war which may prove a blessing in times of peace. No one would have dreamed that when the chemists invented mustard gas, one of the most devastating methods for causing disablement and death, a new chapter was being opened in the fight against malignant disease. But threshold doses of the variant, nitrogen mustard, appear to have a specific effect on cell nuclei, especially on dividing cells, in a manner comparable to the effect of irradiation. This fundamental fact is of far more importance than the therapeutic results, which have so far proved disappointing, in malignant disease or leukaemia and Hodgkin's disease. The hint of beneficial action is of tremendous import, for literally hundreds of variants await synthesis and evaluation, and it may well be that the delicate chemical changes which differentiate normal and malignant growths may be controlled not by the crude and powerful effects of penetrating rays but by a simple chemical.

The vitally important work of Dodds on stilboestrol, which has such a profound influence on prostatic cancer, is a significant pointer to the future. I can do no more than mention even a small section of other advances; for example, the vast increase in knowledge about blood and blood transfusion, the fractionation of plasma, the complexities of the Rh factor, the further understanding of haemopoiesis with the discovery and study of folic acid, the comprehension of the fundamental pathology of haemolytic disease of the newborn, and so on. All of these, in one single field of medicine each and severally demand the employment of an expert or of a team of experts. Transfusion alone, once an everyday commonplace arranged by a carefree house-surgeon, can no longer be embarked upon without the expert performance of many precautionary tests.

Specialization

As with medicine so with surgery. It is barely a century since the boon of anaesthesia was introduced. It is not much more than half a century since the surgeon operated in his own special gown, a black gown, stinking with the dried abominations of previous operations. Now, with the bogy of sepsis largely controlled, even under the terrible conditions of war, the potentialities of surgery, the field of execution, and the requirements in special technical knowledge and apparatus have become so large that no one man can hope to practise efficiently in more than a limited field. With the more extensive and hazardous operations assistance is necessary from a highly trained team supported by subsidiary teams with complex apparatus merely for such things as the anaesthetic. Gone are the days of the individual general surgeon. Almost all surgeons are specialists in a limited field.

So also with diagnostic measures. An individual clinical opinion is nowadays rarely sufficient, for it can be checked against a host of scientific procedures, including radiography, pathological and biochemical tests, electrical determinations involving the heart and brain, and so on. Similar methods are also required in continuous series for the control of many forms of treatment and for estimating prognosis and progress.

The Economic Factor

All of what I have said has to be reviewed in relation to the patient's economic status and his mental outlook. There are none who can doubt that, with the advance of science, and the high degree of specialization, so that a man must now have not one but many doctors, and because of the volume of ancillary examinations which are necessary, or deemed necessary, the cost of an illness is beyond the purse of the average person. This factor—the economic one—has been potent in hastening the inevitability of a State medical service. A few facts and figures will serve to establish the point.

With an illness no more serious than a pyrexia of unknown origin which in due course might cure itself the cost of establishing the diagnosis, of determining whether the cause is amenable to modern chemotherapeutic methods of treatment, or of establishing that the fever is not due to something which is a public menace may amount to as much as £50. A single patient with pulmonary tuberculosis for whom a thoracoplasty operation is required may call for the expenditure of more than £1,000 from the time of admission to hospital to the time of discharge some months later. And all will be familiar with the primary cost of penicillin or streptomycin treatment, amounting at the outset to hundreds of pounds for a single case. Yet, in the interests of humanity, such treatment cannot be withheld on economic grounds. It would be a travesty of justice were such treatment to be available to only the few rich people whom successive Chancellors of the Exchequer have permitted to survive in this country.

As to the other point, the patient's outlook: an enormous expansion of the Press during the past 50 years has made the public aware of notable advances in medicine, sometimes long before they have matured sufficiently even to be tried on the human subject. I will not say that the information by the lay press is always accurate, in that accuracy tends to take second place to news value. I find myself sometimes surprised by my ignorance of the latest advances in medicine which a lay friend will expound from knowledge based upon an article which he has skimmed in a popular weekly journal or the lay press or heard on the wireless. Sometimes premature publications of this kind do untold harm and bring bitter disappointment to patient or relatives as well as anxiety and worry to the doctor. Witness the broadcast appeals for streptomycin before the material was either available or had been evaluated. Because a medical discovery is news the public are made aware of modern advances in diagnosis and treatment and therefore demand them —sometimes under a threat of legal action. On this aspect of medicine some cryptic, very true, and extremely salutary comments have been made by Ffrangcon Roberts (1948).

It has been my purpose so far to point out how changes in medicine itself have tended to increase the cost of medical treatment so that most people can no longer afford to be ill.

State Intervention

The intervention of the State has, of course, been hastened by the occurrence of three wars within the first half of the present century. The consequent social and economic upheaval is so obvious that there is little need for comment, save to emphasize that the dramatic events of the past 50 years have forced the State to interfere not only with measures to protect the public health but also in personal services to the individual. With each successive war the intrusion of the State has become more and more prominent.

It is well known that the examination of recruits for the Boer War revealed such an appalling state of national fitness that it was deemed necessary to set up a Royal Commission to devise means for improving the quality of the man-power of the nation, which all the signs of the times showed would be required for a further European struggle. As a result a school medical service was begun in 1907, to be followed quickly by maternity and child welfare services and soon by Lloyd George's National Health Insurance Scheme. The Ministry of Health was born out of the turmoil of the 1914–18 war, whilst with the last struggle it was necessary to make provision for an Emergency Medical Service, upon which experience some of the proposed State service is to be founded. If, then, we are forced to conclude that some form of State service has come to be inevitable because of a social and financial revolution of whose implications we are as yet only dimly and fearfully aware, can we draw from history any comforting prognosis with regard to its probable success or can we take stock of our achievements at the end of an epoch and find satisfaction therein?

We should realize once again that there is nothing new under the sun, that some form of State control of the profession is no new venture. We live in A.D. 1948, yet at about 1948 B.C.—significant date—King Hammurabi, of Babylon, issued an edict whereby the conduct of medical practice in his kingdom was governed by a code which was published in every market-place. This code defined the conditions under which doctors might practise; it stipulated and limited their rewards for successful work and imposed savage penalties for unsuccessful results. It is some comfort to us to know that if an operation is fatal in these days the National Health Service Act will not prescribe that the hands of the surgeon be cut off.

Egyptian medicine was governed by the code of the Ebers Papyrus; whilst the books of Leviticus and Deuteronomy describe a fine example of public health regulations under central control. Indeed, in public health measures we have no great reason to be overproud of our accomplishments when we realize that Roman medicine had so evolved from the teachings of Hippocrates and the Greek school that the city of Rome had a sanitary service which was in some ways in advance of our own. For example, the city had a water supply allowing 300 gallons per head of the population, whilst even our best-equipped cities cannot give more than 35.

The Problems of Medicine

In all aspects of medicine we need to be humble. We can be proud of what has been accomplished so far, so long as it does not blind us to the fact that most progress has occurred in relation to acute diseases. Despite great advances in the control of bacterial diseases, and however great such advances may be in the future, medical science must always go forward. It is a remarkable fact that no sooner is the cure or control of one disease accomplished than new problems appear to arise forthwith. At one time it seemed that gonorrhoea could be almost controlled with the sulphonamides, but nowadays it is recognized that a large proportion of cases, many more than hitherto, are sulphonamide-resistant. Is this an example of the aphorism "Make haste to use a new remedy before it is too late," or is it that bacteria are really capable of rapid adaptation? The latter is probably the truth. In due course penicillin-resistant staphylococci may become common, whereupon the whole search must begin again. Likewise with streptomycin, to which resistance appears to be quickly established. Roberts (1948) has aptly said: "Our most dazzling successes have concerned those noxious agencies which differ biologically from or are extraneous to

human life rather than those which resemble or are inherent to it." The chronic diseases and the degenerative processes which cripple and disable in the latter phases of life, and the uncontrollable activity of the malignant cell, are as yet not comprehended, much less controlled.

The problems of medicine are indeed almost unfathomable, and these very facts are part of the fascination of medical life. In effect, we know relatively little, and one sometimes wonders whether the public would put such trust in us if they properly realized our limitations. We have not yet begun to fathom the secret of vitality—that property which gives even to the smallest and simplest cell the power to accomplish, in a brief moment, chemical reactions which years of labour in a laboratory cannot reproduce. Think of the bacteria, in which, as Mudd (1948) has said, "the structure so far revealed, even with the electron microscope, is so much simpler than the remarkable synthetic capacities of micro-organisms would seem to require. The bacterial cell, when furnished with nothing more than water, salts, glucose, and simple sources of carbon, and nitrogen, can synthetize proteins, complex carbohydrates, lipids, ribose, nucleic acid, growth accessories, and enzymes, all organized in a characteristic and reproducible protoplasmic system. The bacterial cell can reproduce itself and divide within half an hour at body temperature. These feats of chemical synthesis and organization, which cannot be duplicated by the finest chemical laboratories, are accomplished within a cell a few microns in length and less than a micron in diameter. The plain facts would be fantastic were they not so familiar."

With this sobering thought in mind, and with the realization that the nationalization of our profession must inevitably increase restrictions on individualism which advances in science have themselves initiated, let us hope that there will always be elbow-room for a man to work out his own ideas, to be outspoken in criticism and in debate, and to be free from unnecessary restrictions, regulations, and regimentation.

Let us hope also that men may still be inspired to undertake work for the love of it. For most if not all of the great advances in science, as well as the finest work in every branch of the medical profession, have been accomplished by men whose work has been their life, by men who have never given a thought to a 40-hour week, and by many who have been undaunted by, indeed oblivious of, poverty, makeshift equipment, or cramped quarters. Modern team-work provided, organized, and financed by the State can do much to exploit and perfect a fundamental discovery. Witness the speed with which money and co-ordinated work brought penicillin from being an interesting laboratory phenomenon into the realm of everyday therapeutics.

But by looking back into history I hope I have made it abundantly clear that individualism has done so much in the past that were it to be extinguished either by the State, by easy living, by regulated hours or indeed regulations of any kind, or by too much insistence upon plans and planning, then the future changes in the face of medicine will never reach the same heights of achievement as in the past.

REFERENCES

Chadwick, J. (1947). *Lancet*, **1**, 315.
Fleming, A. (1929). *Brit. J. exp. Path.* **10**, 226.
Langdon-Brown, Sir Walter (1946). *Some Chapters in Cambridge Medical History*. Cambridge Univ. Press, London.
Mudd, S. (1948). *Nature, Lond.*, **161**, 312.
Roberts, Ff (1948). *British Medical Journal*, **1**, 485.
Rolleston, Sir Humphry (1929). *The Rt. Hon. Sir Thomas Clifford Allbutt. A Memoir*. Macmillan, London.
—— (1932). *The Cambridge Medical School*. Cambridge Univ. Press, London.

MEDICINE AND THE PUBLIC HEALTH

BY

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"Looking too into that larger world from the more compact experience of our own specialty, we can vividly see, in relation to many of its chief evils, that the Profession of Statesmanship, like the Profession of Medicine, must be intent on methods of Prevention no less than on possibilities of Cure, and must derive its preventive methods from a genuine science of Causes."—SIR JOHN SIMON.

The establishment of the National Health Service is the culmination of a hundred years of endeavour for the public weal. It is a historic moment, the end of an epoch, the beginning of a fresh advance towards the maintenance of health and the conquest of disease and social evil. It is appropriate, therefore, to reflect upon this marriage of true minds, the union of preventive with curative medicine, and to inquire how it has been effected in the course of time.

Eighteenth-century Pioneers

Public health is an edifice at which many have laboured. Statesmen, administrators, philanthropists, engineers, chemists, physicists, biologists, and others have wrought in its building. But the design and planning of the structure and its secure foundations are due to the medical profession of Great Britain, who must ever take a legitimate pride in its success.

The science of preventive medicine emerged from the practice of clinical medicine in the eighteenth century. Pioneers like Mead, Huxham, Heberden, Fothergill, Willis, and Withering observed the clinical features of epidemic disease, the influences of external environment, the paths of contagion and infection, and the effects of climate and season. Three men—Smellie, William Hunter, and Charles White—reduced the high rate of mortality in childbirth. Jenner practised vaccination. Lettsom and Cadogan paid attention to infant welfare. Aikin, Percival, and Ferriar formed with others a Voluntary Board of Health which called attention to the prevention of the mortality, disease, and crippling seen in persons employed in the new industries.

Establishment of State Medicine

In the early years of the nineteenth century the increased and sudden urbanization of the people brought about by the Industrial Revolution created most serious sanitary problems. Not only did the conditions in the factories promote degradation, crippling, and disease, but the home conditions of the workers were even worse. Dirt and disease, malnutrition, and sometimes starvation prevailed, and these horrible conditions were aggravated by the increasing density of the population. Infectious diseases rioted uncontrolled to a large extent throughout England, and the economic loss to the nation caused by ill-health must have been considerable. A great and humane physician, Thomas Southwood Smith, directed public attention to these evils from 1838 onwards. His reports, together with those of Dr. Neil Arnott and Dr. James Phillips Kay, to the Poor Law Commission showed how much could be done to combat prevalent disease and made the Commission the stepping-stone to public health reform.

These three eminent medical practitioners—Southwood Smith, Arnott, and Kay—are the medical architects of State medicine. It was Southwood Smith who first

instructed Edwin Chadwick and Lord Shaftesbury in the possibilities of preventive medicine, inspired their life-work, and conducted the medical and social investigations on which their arguments were based. Both Chadwick and Southwood Smith were disciples of Jeremy Bentham, inculcated with his utilitarian philosophy, and aware of his emphasis on the need for central control in government. Edwin Chadwick's zealous work for health reform on the Poor Law Commission and his famous synoptical report led to the enlightened Public Health Act of 1848 and the provision of a central health department, the General Board of Health, directed by Chadwick and Shaftesbury. This opened a new chapter in State medicine inspired by medical knowledge and inaugurated Government responsibility for the health of the nation. Chadwick failed through his autocratic methods and disregard of local views and prejudices, and retired with Shaftesbury in 1854. The Board of Health did useful work in promoting environmental hygiene. Dr. W. H. Duncan was appointed medical officer of health for Liverpool in 1847 and Dr. John Simon in a similar capacity for the City of London in 1855. In 1839 William Farr, L.S.A., had been appointed "Compiler of Statistics" to the General Register Office. His reports to the Registrar-General from 1840 to 1880 deduced practical lessons regarding the causation and prevention of disease which have formed a most potent factor in determining the wonderful triumphs of public health in this country.

The Medical Department of the Privy Council

In 1858 new legislation transferred the medical duties and public health functions of the General Board of Health to the Privy Council and its Poor Law administration to the Home Office. It was proposed not to reappoint the medical officer, and this intention was altered only through the private intervention of the Prince Consort, who took a special interest in social and health reform. Fortunate indeed was England at this critical time when the forces of reaction were in the ascendant that the Privy Council secured as their medical officer a man of great abilities and wisdom. Sir John Simon's operative skill and clinical knowledge are overshadowed by his outstanding work in public health. He was, however, in the front rank of London surgeons, and held the post of surgeon to St. Thomas's Hospital up to his retirement in 1876, becoming President of the Royal College of Surgeons, 1878–9. Active clinical experience continually refreshed his official labours in Whitehall.

Simon created his own position, and the influence exerted by his successors on State medicine and the importance of the office of Chief Medical Officer of the Central Health Authority derive from him. He had a great share in the planning of a statutory constitution for the medical profession, which led to the Medical Act of 1858 and the setting up of the General Medical Council and the *Medical Register*. Himself an eminent surgeon and pathologist, he had the support of the medical profession; and inasmuch as the early work of his department required highly specialized knowledge in particular subjects, he secured, at first on a temporary basis, the services of eminent men of medicine. Among the many who were proud to serve under Simon's direction may be mentioned Dr. Greenhow, Sir John Burdon-Sanderson, Sir George Buchanan, Dr. Milroy, Dr. Edmund Parkes, Dr. Seaton, Dr. Stevens, Dr. Bristowe, Dr. Guy, Dr. Thudichum, Dr. Edward Smith, Mr. Netten Radcliffe, and Sir Richard Thorne Thorne.

It is hardly possible to overestimate the value of the contributions which this devoted band of medical pioneers made in the advancement of medical knowledge and of preventive and social medicine. Nothing was too great and nothing too insignificant for them to examine in the interests of the public health. Simon welcomed new medical discoveries and applied them—for instance, John Snow's discovery that cholera was conveyed by water and William Budd's epidemiological studies of typhoid The inquiries of Dr. Greenhow made industrial hygiene a matter of State responsibility and led to the important work of Sir Arthur Whitelegge and Sir Thomas Legge—the creation of a medical staff at the Home Office and the protection of the worker from industrial risks and diseases. Hospital hygiene was investigated; the state of national nutrition was estimated as early as 1862; Thudichum's researches constituted pioneer work in biochemistry, the first of its kind in this country; and in 1870 Parliament approved the Auxiliary Scientific Investigations as a separate item in the Privy Council's estimates and granted an annual subsidy of £2,000. The State for the first time recognized the importance of research into health and disease. Out of this small beginning came the valuable work of Eastwood, Stanley, and F. Griffith for the Royal Commission on Tuberculosis, the scientific investigations of the Local Government Board and Ministry of Health, and the great work of the Medical Research Council. It was Simon who first officially called in the laboratory worker to the aid of preventive medicine.

Royal Commission of 1869–71

On Simon's advice the Lords of the Council promoted the Sanitary Act of 1866, which gave increased powers to local authorities in the interests of the public health. This legislation was an advance, but it was by no means comprehensive enough, as Simon pointed out in his reports of 1869 and 1870. The motive power came from without, from clinicians, the British Medical Association, and the Social Science Association, and was initiated by Mr. H. W. Rumsey, F.R.C.S., F.R.S., of Cheltenham. Their appeal for promotion of "a better administration of the laws relating to registration, medico-legal inquiries, and the improvement of the public health" resulted in the famous Royal Commission of 1869–71. Its medical members were Sir Thomas Watson, Sir James Paget, Sir Henry Acland, Sir Robert Christison, and Sir William Stokes. As a result of the Royal Commission's work the Local Government Board was founded in 1871. By the Public Health Act of 1872 local authorities, such as urban district councils, rural district councils, etc., were set up and the general appointment of medical officers of health by each authority became obligatory. Disraeli's Government brought in the great Public Health Act of 1875, which consolidated all the previous enactments into a compendious sanitary code.

Local Government Board

The Local Government Board was founded too rigidly on Poor Law procedure; hence the legal aspect predominated, while its medical work was subordinated to lay direction. Through the ability and influence of the successive Medical Officers of the Board—Seaton, Buchanan, Thorne Thorne, Power, and Newsholme—four of whom had been selected by and worked with Simon, the Medical Department of the Board preserved harmonious relations with the lay administrators, initiated measures of public health, and increased the sum of scientific and medical knowledge.

The discoveries of Lister, Pasteur, and Koch directly or indirectly aided progress in preventive medicine and public health. Pioneer work in bacteriology and chemical pathology was done by Klein, Copeman, Sidney Martin, Victor Horsley, Houston, Horder, M. H. Gordon, and others for the Local Government Board. The long list of scientific papers appended to the Medical Officer's Annual

Reports are fundamental contributions to knowledge. County Councils and County Boroughs were established in 1888, and in 1909 the appointment of county medical officers of health became obligatory. Isolation hospitals for the treatment of infectious diseases were provided, and notification of these diseases was introduced; Poor Law hospitals were improved and some local authorities provided municipal hospitals. The water-borne diseases became negligible, cholera was abolished, typhoid fever diminished, smallpox became rare, and typhus disappeared. Port sanitary administration prevented the admission of plague and pestilence. By 1900 the general decline in mortality and the improvement in the health of the country were indeed remarkable when it is remembered that urbanization, so favourable to the diffusion of infection, was on the increase.

The National Health Services

By the beginning of the twentieth century influences were at work which brought a new motive power into health reform. The *Essays* of the Fabian Society, Charles Booth's and Rowntree's social inquiries, and the historical and scientific studies of Sidney and Beatrice Webb made the need for extension and reorganization of medical services clear and impressed public opinion. In 1905 a Royal Commission on the Poor Laws was appointed, and reported in 1909. Twenty years were, however, to elapse before action was taken to fulfil the Commission's findings by the Local Government Act of 1929.

Under the influence of this revived interest in national health reform the first health service to be founded was the School Medical Service. Its inception owed much to clinicians like Dr. James Kerr, of Bradford, and Dr. Frederick Warner, of the London Hospital.

"In addition to direct medical results, the teaching of hygiene and cleanliness, the physical training, and the provision of milk and school meals have reformed the physical and mental condition of the children of this land beyond all comparison with the past." Thereafter followed the National Insurance Act of 1911, which provided a system of insurance against ill-health for a large section of the working population. It gave medical benefit, thus confirming the role of the medical practitioner as the first line of defence in combating disease. The industrial workers of the country had free choice of doctor and ready access to medical advice and treatment. The Health Insurance Service was introduced after much controversy and medical opposition. It proved its usefulness, and much of its success was due to the help of members of the British Medical Association in developing its potentialities. Sir James Smith Whitaker, the medical head of the Service, had formerly been Secretary of the Association.

Out of the National Insurance Act came two great services, the Medical Research Council and the Tuberculosis Service. Two other important health services, both initiated by the Local Government Board, were the Maternity and Child Welfare Service and the Venereal Diseases Service. In organizing these important services the central department derived great assistance from the advice and counsel of eminent practising physicians like Sir Thomas Barlow, Sir Robert Philip, and Sir Frederick Mott. Most of these services had been begun by voluntary workers, both medical and lay, and no progress could have been achieved in them without the unfailing and disinterested co-operation of the medical profession. Especially is this true of the regularization of the practice of midwives, which has been an important contribution to the decline in maternal mortality. Two obstetricians, Sir Francis Champneys, of St. Bartholomew's Hospital, and Dr. C. J. Cullingworth, of St. Thomas's Hospital, strenuously advocated licensing legislation for midwives, and at length secured the Midwives Act of 1902 and the Central Midwives Board, which keeps a roll of certified midwives and regulates their certification and practice.

The benefits reaped by the nation from these State services have been permanent and far-reaching, because they have been founded on sound medical knowledge.

The Ministry of Health

During the war of 1914–18 an urgent demand arose for the fuller integration of State medical work. In 1917 the Minister of Reconstruction appointed a Local Government Committee, with Sir Donald Maclean, M.P., as Chairman. This committee reported strongly in favour of a Ministry of Health, and in 1918 the Ministry of Health Act created a Ministry of Health and transferred to the Ministry the health and Poor Law powers and duties of the Local Government Board and the office of the Registrar-General; the duties and powers of the Insurance Commission; the medical powers and duties of the Board of Education; and the powers of the Privy Council under the Midwives Acts. Dr. Christopher Addison, M.P. (now Viscount Addison, K.G.), became the first Minister of Health; the Hon. Waldorf Astor, M.P. (now Viscount Astor), the Parliamentary Secretary; Sir Robert Morant the Permanent Secretary; and Sir George Newman the Chief Medical Officer. The Ministry's high aims are "to bring every advance in medical science, every measure calculated to maintain health and to prevent disease, to the service of the people, and to make health the birthright of every inhabitant of this country." Its influence in this respect is greatly strengthened by the support and advice which it receives not only from other Government departments but also from representative bodies of the medical profession and a host of voluntary societies and associations concerned with various aspects of public health. In modern times conspicuous advances have been made in medical knowledge, and these in turn have enhanced the potentialities of preventive medicine. The Ministry has consolidated and developed the health services; it has done great things in the field of international health; it has reduced the mortality and incidence of many diseases, including diphtheria, by encouraging immunization; studied the problems of nutrition; fostered orthopaedic treatment, the early diagnosis and treatment of cancer, the treatment of the rheumatic diseases; and has seen its reward in improved national health and the progressive reduction of the death rate.

The Dawson Report

The defects of the National Insurance Act were that general medical practice was not adequately associated with the clinics and public health work of local authorities, that the Act did not provide for the dependants (wives and children) of insured persons, and that it did not provide hospital or specialist treatment. These defects were early appreciated, and by none more keenly than the late Viscount Dawson of Penn, who served on the Ministry of Health's advisory medical council for many years and helped the cause of medical progress with his experience and wise statesmanship. In 1920 a proposal for the integration of medical services was propounded in an Interim Report of the Consultative Council for Medical and Allied Services. This Council was appointed by the Minister of Health, and Lord Dawson was its Chairman.

The proposal contemplated the provision, in the districts of small population, of primary health centres, mainly under the control of general practitioners; and secondary health centres served by consultants in the more populous places, with a link to the nearest teaching-hospital centre.

This plan is the parent of all regional schemes of health services. It represented an honest and able attempt to reconcile conflicting medical interests for the benefit of the public. It is regrettable that medical and public opinion was not at the time enlightened enough to give adequate consideration to this report. The proposal might have been worked out on an experimental basis in one or two areas. Something of the kind was indeed attempted in Gloucestershire, but through lack of central encouragement it achieved only partial success.

The State's Concern for Hospital Services

It remained true, therefore, that all the resources of medical science were not available for the community as a whole. The wealth of new knowledge, demanding in its branches individual study, technique, and constant application, makes the general practitioner of to-day unwilling to undertake major operations or to pronounce the final opinion upon difficult problems of disease. There are many cases in which, in the interests of the patient, recourse must be had to a specialist who has made a close study of a particular disease or condition—for example, the orthopaedic surgeon, who is preventing the onset of crippling and treating cripples with new methods. But, over and above the need for the specialist, the modern diagnosis and treatment of many diseases demand large hospitals and clinics equipped with expensive apparatus and laboratories. Deep *x*-ray therapy in cancer, radium treatment in the same disease, a department of thoracic surgery, are notable instances of this need. These fully equipped institutions are expensive to provide and maintain, yet for the effective prevention and treatment of disease they are essential. Many lives are lost annually and much unnecessary disease and suffering occur because these facilities are not universally available. Sometimes the patient's condition is either never diagnosed or he is sent for diagnosis at too late a stage.

Informed of these matters, the Ministry of Health turned its attention to improvement and extension of the hospitals in the country.

The Local Government Act of 1929 enabled local authorities to provide for the hospital needs of sick persons in their areas in the following ways: (1) through existing Poor Law infirmaries (Public Assistance Hospitals) for necessitous sick persons; (2) by appropriating Poor Law infirmaries as public health hospitals; (3) by building new public health hospitals; (4) by making arrangements with suitable voluntary hospitals in their areas for the care of sick persons. In these different ways the hospital provision in the country was increased and much improved. Voluntary hospitals during the past thirty years have been greatly dependent on local authorities for contributions for services rendered—hospital beds, maternity and child welfare clinics, tuberculosis dispensaries, and V.D. centres. This was particularly so in London, but it also applied to the provinces.

In my Annual Report to the Ministry of Health, 1937, I drew attention to the growing provision of specialist and pathological services by local authorities and advocated co-ordination, integration, and development of these services with a general practitioner service for the benefit of the community. This process of peaceful evolution had to be abandoned. The coming of war altered the situation. The Emergency Hospital Service came into being and demonstrated the practicability of successful co-ordination of the work of voluntary and local authority hospitals, while the Medical Research Council, with the support of the Ministry, established a comprehensive Public Health Laboratory Service.

National Health Service Act

In 1942 the Medical Planning Commission of the British Medical Association produced a valuable draft interim report, and Sir William Beveridge's *Report on Social Insurance and Allied Services* appeared. Following on this came the White Paper entitled "A National Health Service" (Cmd. 6502), published in 1944, in which the Coalition Government made proposals for the establishment of such a service. In 1946 Parliament passed the National Health Service Acts, by which the Minister of Health and the Secretary of State for Scotland are to promote a comprehensive health service for the improvement of the physical and mental health of the people of England and Wales and Scotland, and for the prevention, diagnosis, and treatment of illness. Thus, in the course of a hundred years the work of preventive and social medicine, work for the most part, as we have seen, inspired and directed by the medical profession, comes to full fruition.

In new ways and with new methods the medical profession will carry on the great traditions of their predecessors in the promotion of national health. As Disraeli said in 1877, "The health of the people is really the foundation upon which all their happiness and all their powers as a State depend."

ADMINISTRATION OF MEDICINE*

BY

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LECTURE I

The "appointed day" is near at hand and we stand on the brink of the abyss, some say, and others say of the Millennium. It is pertinent therefore to study the great wartime service experiment of a planned national service. It might be that there are lessons to be learnt from it which would help us in this new experiment of a planned civilian medical service, and certainly there will come from such a study suggestions for the improvement of the medical services of the Armed Forces.

The Army Medical Service in the late war was a reasonably successful experiment in planned medicine. Too close an analogy between that service and the possibilities of the National Health Service cannot be drawn, since there are many medical problems in civilian life which do not confront us in the Army in wartime and many problems peculiar to active service which have no relevance in civil life.

The Army Medical Service had to deal overseas with a population predominantly male between the ages of 18 and 60; a population receiving standard wages, wearing standard clothes, eating standard food, living it is true very varied lives but under obedience and subject to direction in the fullest sense. The Services provided a complete medical, surgical, and dental service for several million individuals under every climatic condition and in spite of every difficulty of communications by land or sea.

By the end of the war a comprehensive service was provided which though far from perfect yet ensured that every man in the Service was better looked after from the health point of view than he had been in peacetime before he joined the Service, and far better than it will be possible to look after him in civil life for a long time to come.

*The Croonian Lectures (abridged) delivered at the Royal College of Physicians of London on Nov. 18 and 20, 1947.

Preventive Mepacrine

The first piece of medical planning with which I was associated was in connexion with the prevention of malaria in 1943. Algeria and Tunisia face the Mediterranean, have the Sahara at their backs, with high mountain ranges in between, and with a fertile strip less than 80 miles deep between the mountains and the sea, watered by streams which run down from the mountains and intersect the country with deep "oueds" or river valleys, all of which are highly malarious. Since the lines of communication lay through the river valleys, although the intervening uplands were dry and waterless, it was decided that malaria could not be prevented by sanitary methods alone, and that it was necessary to place all the United States, British, and French Forces engaged on preventive mepacrine. The wholesale use of preventive mepacrine at that stage of the war was not the commonplace which it has since become. All we had at that time to guide us were a few reports of comparatively small-scale experiments made in various other parts of the world under dissimilar conditions.

Having decided that suppressive mepacrine should be given, the first problem was that of dosage. There were two schools of thought at that time: first, that two 0.1 g. tablets twice a week were effective, and secondly, that complete suppression could only be obtained by taking 0.1 g. daily. For various reasons, one of which was a doubt about the available supply, we decided at a joint conference of United States and British officers to adopt the first plan of dosage. My American colleagues were a little doubtful about the necessity for the general use of suppressive mepacrine and were inclined to favour selective mepacrinization of the troops in dangerous areas only. We took the view that as there was constant movement in and out of these malarious belts it was safer to make a universal rule, and this view was finally adopted. Colonel Perrin Long, the United States Army consultant, warned us that we might have trouble with toxic effects when mepacrine was given on a wide scale to hundreds of thousands of men, and quoted some work in the United States in which mepacrine had been given to medical students and convicts.

Since ours was an Allied Headquarters and this was the first large-scale experience of United States and British collaboration in the field we were anxious to make our orders uniform, and a joint administrative order laid down that from a certain date mepacrine should be taken by all troops on the Tuesday and Friday of each week, one 0.1-g. tablet to be taken after the midday meal and one after the evening meal. The British order was sent up for Staff approval before issue, but before it was printed the United States deputy surgeon who was considering the matter thought that it would be better if his troops took the two tablets together after the evening meal so that if toxic effects occurred they would for the most part be at rest and therefore the less affected. He consulted the chief surgeon, who was also the British Director of Medical Services, and he agreed, and the United States order was issued and in print before anyone else had a chance to see it, and when we did see it, it could not be recalled. Since we thought the alteration was of little importance and we were anxious to have uniform orders, we amended our own instructions to conform with those of the United States, although the method of dosage was not the one we had previously agreed upon.

We decided to give mepacrine to the troops at the various bases and on lines of communication before giving it to fighting troops, chiefly as a dress rehearsal of the application of mepacrine discipline and more in fear of psychological than of clinical reactions.

Unlucky Accident

All went well on the first and second mepacrine days, but on the third day the Forces were struck as with one of the plagues of Egypt. When I reached Headquarters the next morning, I found that more than half the staff were absent, some of those present looked pale, hollow-eyed, and shrunken after a night of vomiting and diarrhoea. Reports and messages streamed in every minute reporting that whole units and formations were incapacitated and unable to function. On that day and to a lesser extent on succeeding days the base Force of thousands of men was partly disorganized. The symptoms were really severe and consisted mainly of explosive vomiting and equally violent diarrhoea; intense headache and a high temperature were present in many cases, and all sorts of genuine cerebral as well as psychogenic symptoms. Nobody died, so far as I know, but many took a long time to recover, and the efficiency of units was at least 33⅓% diminished for two or three days. No enemy act of sabotage could have been more effective than this well-meant administrative order issued on our advice. Rapid decisions had to be taken. The First Army was due to attack in a few days' time and was also due to start taking mepacrine. What was an inconvenience at the base might well be a disaster in the forward areas, and orders were immediately issued to delay the taking of mepacrine until after the impending battle. Meanwhile immediate rapid tests and investigations were being carried out which showed that perseverance produced rapid tolerance in all but an insignificant minority. There was considerable pressure by some sections of the Staff to abandon universal mepacrine, but the medical authorities, though shaken, stood firm, and the order was maintained although the dosage was altered, and finally it was extended to the now victorious First Army without any further ill results.

Later, experiments carried out by the N.R.C. and the M.R.C. with various forms of administration and scales of dosage showed that, by an unlucky accident, we had selected the only combination of time and dosage which gave a high proportion of toxic results in control cases.

Although the policy was not altered, these spectacular events were a disastrous accompaniment for a propaganda campaign in favour of malaria prevention which was already meeting with stubborn opposition from many quarters, both high and low.

The result was that mepacrine discipline was inclined to be slack and half-hearted in many units, especially non-combatant ones. Army hygiene officers and their non-medical assistants, with the help of the French, did wonders in malaria control and education in spite of the shortage of time and equipment, but personal precautions including mepacrine were by no means universally followed. Army health propaganda, like civilian health propaganda, needs an epidemic of death to drive it home, and it was death in North Africa and the fact that the Eighth Army nearly came to a standstill in Sicily which eventually drove the point home, and from then on mepacrine discipline became adequate, if never so perfect as it appears to have been in the Pacific.

Obligatory Report on Every Death

A different type of medical planning is illustrated by the history of the treatment of malaria in North Africa. Malaria appeared in earnest in June, 1943. At first there were a few cases of benign tertian malaria, and then a very severe and deadly form of malignant tertian malaria occurred with an ominous number of deaths. I was quickly apprised of this by physicians with whom I was

in close touch by reports and visits, and also by the special reports on medical deaths which were a rule of the theatre. When I was a medical divisional officer in Egypt, G.H.Q. Middle East issued an order that the officers in charge of medical divisions should write a complete report on every death, giving the symptoms, course, treatment, and post-mortem findings, and send it to Headquarters. We cursed bitterly at the time, but I found it such a salutary mental and moral discipline myself that as soon as I arrived in the North African theatre an administrative order was issued to make these reports obligatory. It is impossible to overestimate the value of these reports in Army medical planning. Not only did they give information about the symptomatology and course of diseases but showed up at once difficulties of diagnosis, errors and difficulties of diagnostic technique, faults in administration, shortages of drugs, and the quality and judgment of the medical personnel. I am sure they were unpopular, but they eventually saved many lives by the information which they gave and the reforms they were instrumental in initiating.

Study of the early death reports made it at once apparent that parenteral quinine was not being given or was not being given early enough; that many medical officers were not aware of the very varied and to them unexpected manifestations of malignant tertian malaria; that slides were not being taken as an invariable routine in cases of pyrexia; that pyrexial patients were being treated in camp reception stations or units not equipped with microscopes and parenteral quinine; that treatment was being delayed until patients reached general hospitals; that it was being held up in general hospitals by delays in diagnosis; and that patients were being killed by being evacuated from unit to unit unnecessarily.

An urgent directive was issued to every unit dealing with all these points and pointing out with greater emphasis the dangers of delay in giving parenteral quinine and the negligible dangers of giving it, and pointing out the snags and faults of diagnosis and the importance of speed in diagnosis and especially of speed in treatment.

The effect of this dissemination of information and of the orders which were issued and the sense of urgency produced by them, as well as the rapidly increasing experience of medical officers, was at once apparent in the abrupt fall in the death rate, although the number of cases was increasing. Soon death occurred only in really fulminating cases, in newly arrived and inexperienced units, or in prisoner-of-war hospitals where the dissemination of information and pooled experience was less rapid.

I have given a rather longer account of this than the present interest warrants chiefly to show how quickly results can be obtained by planning which depends on a good source of information and a rapid, ready way of disseminating the result. If the staff of hospitals had been left to learn by their own experience, they would probably eventually have reached the same conclusions, but only after long delays and detours and with considerable irregularity in standards, and their individual efforts to effect administrative improvements would have met with infinite delays and obstruction.

I do not wish to give the impression that medical practice in a theatre of war was conducted by a series of inspired directives and orders of almost divine wisdom. I imagine most medical officers remember more foolish orders and instructions than they remember wise ones, but information did not flow in one direction only. Constant information was being received either orally or by letter from all the specialists in the Command, and it was possible to disseminate the summate collective information of the whole theatre and other kindred theatres.

Use of Sulphonamides

I will give another example of how this double flow of information worked. Impetigo and desert sores were a very prevalent condition causing much disability. Sulphonamides, including sulphadiazine and sulphathiazole, were found very effective in treatment and were generally used. Dermatological cases formed a large percentage of all the cases treated in any military general hospital, and since there were only two trained dermatologists in the whole Force two dermatological centres were formed at strategically placed hospitals into which all the cases presenting difficulty in diagnosis or treatment or thought to require evacuation from the theatre were collected. Both the dermatologists reported that they were seeing a large number of men who were suffering from sulphonamide sensitization which was proving refractory to treatment, and that many of them were having to be sent home to England. This information was rapidly confirmed, and it became obvious from study of the cases that the original condition for which most of them had been treated was some local skin infection, and that sensitization had either followed prolonged application of sulphonamide pastes to the skin or occurred in those who, having at one time had sulphonamides applied to the skin, subsequently took them internally for some fresh condition. There was nothing new about sulphonamide sensitization. What was new was the rapid knowledge of the numbers involved and the incapacity produced. Orders were issued that sulphonamides were not to be used for superficial lesions which would heal readily by other means. The reasons for the order were explained and the serious loss of valuable man-power which was occurring was stressed.

The order was at first an unpopular one, especially with regimental medical officers and forward medical officers who saw only the beneficial results of treatment in the first few days, rarely saw the end-results, and often did not recognize them when they did. However, by degrees, with further information and publicity, even the dubious were convinced and cases almost disappeared except for a few treated by medical officers newly arrived in the Command.

This of course was an example of treatment by decree, and it may seem a shocking thing that a doctor should not be allowed complete freedom to treat a patient as he thought fit. In fact, no medical officer in the Army could be made to treat a patient in a manner contrary to his medical conscience, but in a Service where all the patients were under military discipline, unable to choose their medical advisers or their conditions of life, there is a corresponding responsibility thrown on the medical services to see that the patients have the best possible medical care and attention and that nothing is done which could impair their efficiency or ability to fight. Very few instructions of this particular nature were in fact issued. Reliance was placed on advice supported by as much information and explanation as possible; this was effective because the information was, on the whole, accepted and the Service doctors themselves had often contributed the information or experience on which it was based.

Standardization of Treatment

In the Army treatment sometimes had to be standardized for various reasons. Official standard courses of treatment for malaria were prescribed. This was necessary because of the number of cases, the varying standards of experience, and the fact that cases from the forward areas had to be treated in transit, often through three or four units. Treatment by individual predilection in such cases would obviously have had chaotic results.

The potential loss of man-power from malaria could be a serious one in a semi-tropical theatre. It was found that some medical officers were invaliding men home to England after they had had two or three relapses, whereas other medical officers were not finding this course necessary. It was obviously undesirable that there should be an unnecessary drain of useful men from the theatre or that there should become apparent to the soldier an easy way of being invalided with little or no danger to himself. Therefore it was arranged that cases of chronic malaria were to be invalided from two centres at the base where there were experienced officers whose special schemes of treatment and skill in assessment ensured that no man was lost to the theatre unnecessarily.

All the findings of medical boards were studied, and when it was observed that men were being invalided or downgraded for conditions which were preventable special measures were designed in order to remedy the conditions which made this loss of man-power and efficiency necessary.

Reports of diseases and epidemics new to the Force were constantly being received, together with descriptions of symptoms and treatment found effective or ineffective and of new laboratory investigations and experiments, and with suggestions calculated to improve the handling, treatment, and disposal of patients. These reports and suggestions were collected and then made available as information to all the doctors in the Force, or used in forming new decisions or administrative orders which resulted from them.

I will not weary you with an account of detailed planning. I have said enough to suggest how by general cooperation and shared experience, and planning resulting from it, the medical services of C.M.F. eventually became a living unit ready to deal with emergencies as they arose and a coherent instrument to deal with any medical situation. You will now be suspecting that I am about to outline a scheme for administering and organizing the region like military districts. Nothing is further from my thoughts. Wartime Army medical methods rendered necessary by circumstance are effective and acceptable in time of war to doctors united in a single purpose but are quite unacceptable in a free and independent civilian community. What I hope to do in my subsequent Lecture is to suggest how organized Medicine in time of peace can plan to combat disease as the Medical Service, organized in quite a different way, could be used to combat disease in time of war.

Suggested Improvements

I now propose to make some suggestions for the improvement of the Army Medical Service overseas, which may seem an extremely rash, not to say presumptuous, proposition on my part. What suggestions I propose to make, however, are strictly my own, and I give them for what they are worth. Nearly all my suggestions are designed to make the Service more efficient in the event of another war, which unfortunately cannot be regarded as an impossible contingency. It has been said that the country always goes into a new war with the preparation and planning suitable to the previous one. That would seem in some respects an overstatement of our preparedness, but there is some truth in it; and one might aim at a worse target. The 1939–45 war was expected to be completely different from the one in 1914–18, but in effect medically and surgically the problems were substantially the same, and the last war only different from the previous one by being more widespread, more mobile, and less lethal so far as our Forces were concerned.

In the first place, from the administrative point of view, the medical services should cease to be under the control of the Adjutant-General and should be a separate health branch of the Staff, with complete freedom of access to the councils of the Commander-in-Chief instead of having to pass their recommendations and observations through intermediaries who at present have the power of suppressing or altering them.

Secondly, there would appear to be few very strong arguments for maintaining three separate medical services, whereas great economy in personnel and increased efficiency could be promoted by an amalgamation. The general medical and surgical problems are much the same in the three Services and can be simplified only by uniform action and uniform administration. There are problems peculiar to each of the Services. The R.A.F., for example, has special physiological and possibly special psychiatric problems of its own; the Navy and the Army have problems peculiar to each of them, mainly of a physiological character, but their special needs could be served by special formations within the main general service. If it should prove impossible to amalgamate the three medical services, then at least medical procedure and documentation should be the same for all the Services.

Thirdly, the standing of the Regular Army Medical Service from the professional point of view could be much higher than it is. This standard can be raised only by allowing a much larger number of medical officers to be promoted to the higher ranks on the strength of their professional ability instead of making it necessary for them to give up their professional pursuits in order to become administrators and thus ascend the normal ladder of promotion. Up to the outbreak of the last war every regular officer was faced with the position that, if he wished to remain active in his profession, he would have to content himself with the rank of major or else take his chance of being one of the four men in the Corps promoted mainly for professional ability: the consulting physician, the consulting surgeon, director of pathology, and the director of hygiene. Before the war even the officers in charge of medical divisions were often chosen more as administrators than for their professional ability. Further, the Army did not often give the professional man the scope and experience to perfect him in his work. The pathologist and the hygienist were the best off, and it is precisely in these two professional categories that the reputation of the Corps stands highest. Of the medical men in the Regular Army the names best known to the civilian world at least have been those of Army pathologists. In hygiene, the professional branch of the Corps which has been most favoured and most developed, the reputation of the Corps is second to none, and as a result British military hygiene is the best in the world, better than the American and infinitely better than the German or any other Continental country. It is no coincidence that higher promotion is possible for a comparatively large number of doctors who continue to practise these branches of their profession.

Promotion

To raise the professional standards in peacetime two things are necessary—better prospects and more opportunities for experience. It ought to be possible for some officers at least to rise to the rank of full colonel without having to give up their professional work. Standing in the way of this possibility will be found an almost insurmountable barrier called "Establishment." This is an almost holy thing sponsored by the Treasury which certainly prevents the many abuses it was designed to prevent but very often stands in the way of many reforms which justice and common sense dictate. There is a fixed establishment of full colonels. This means that only 85 men in the whole Corps can hold this rank at the same time

If you reach the age of 57 before there is a vacancy in this arbitrary quota you can never make the rank of full colonel and must retire as a lieutenant-colonel, with one-third less pension than you would get if you were promoted. Your arrival in the holy 85 depends only nominally on merit, but largely on the lottery of death of your seniors or on the fact that you joined the Service at the end of a particular week thirty years ago instead of at the beginning or that your name began with a W instead of a B. Promotion to higher rank on account of professional service is only one part of the problem.

Improvement of the standard of professional attainment is the necessary corollary. Much can be done by secondment, by travel fellowships, courses, and the like, but no real improvement can be expected unless there are improved opportunities and clinical facilities. It is impossible for the Army population to provide the necessary clinical material, and I believe the only solution is for the Service to have Army hospitals of large size in every garrison town at home and overseas and to provide medical care for civilians as well as Army personnel. In London, and possibly other centres, there should be a first-class fully equipped general hospital large enough and with a sufficiently skilled personnel to provide the best possible teaching and training for Army medical officers. The Treasury would stand in the way of this development, I am sure, but these hospitals could easily be fitted into the scheme of the National Health Service. Failing this arrangement, the only alternative is wholesale secondment to civilian hospitals, but this would be an unsatisfactory expedient.

Use of Medical Man-power

During the late war there was much said in this country about the Army waste of medical man-power. In neither of the two theatres in which I served was there avoidable waste of personnel, but on the other hand the overseas personnel were persistently and consistently overworked. Some may criticize the use of doctors as regimental medical officers attached to the fighting troops. The actual volume of work requiring medical training done by these officers may be comparatively slight, but the effect on morale in an action or in difficult circumstances is immense; also the medical officers are, as a rule, as reluctant to leave the units to which they were attached as the troops are to let them go.

Proper and accurate records are essential in a planned medical service, but writing them takes up a lot of time that could be more expertly used. The provision of adequate secretarial help and adequate office equipment would effect a saving in medical man-power of between 1 and 2 in 15. The right use of these records requires a proper statistical system and statisticians at every Headquarters. I believe these would pay a heavy dividend by providing the exact knowledge necessary for accurate planning.

The Stores and Equipment Branch of the Army Medical Service overseas needs complete reorganization. The inevitable shortages, the disorganization of transport, and the hazards of war are difficulties enough without adding the handicap of an archaic system or lack of system. I do not think that in any essential respects the United States Medical Service was better than our own, but it certainly was in regard to stores, and more particularly in stores management. Whereas my time and that of my colleagues was greatly taken up with efforts to secure the supply and distribution of the drugs and equipment which, considering all the difficulties, arrived in ample quantities from England, my American colleagues rarely gave their own a thought; they assumed that there were no shortages, and these assumptions were usually correct, but if there were shortages they could find out at once where they occurred and how they could be remedied.

What I have said is meant to be constructive criticism. I have made it because I am proud of the Service in which I worked during the war, and I look back on it and my colleagues with affection, because in spite of the necessary or unnecessary irritations of Army life as a doctor I think most of us felt that we were able to do what we thought best for our patients, and I know that we civilians in the Army owe our professional freedom and our professional status to the inspiration of Sir Alexander Hood and his advisers. At one time, in case there might be any bureaucrats amongst his officers, Sir Alexander Hood told them that he depended for his advice on professional matters on his consultants and advisers, and on his administrators for carrying our the policy based on that advice.

LECTURE II

The National Health Service Act, whatever its drawbacks and handicaps and whatever mistakes it may make and will make, does render possible the planned solution of many problems hitherto insoluble. The Act places a general duty upon the Minister of Health to promote a comprehensive Health Service for the improvement of the physical health of the people, and, as it imposes the duty, it fixes the responsibility upon him. Administration may not be able to suggest new solutions to medical problems or may not be able to find new solutions, but it can at least make known solutions effective, and known solutions exist for the problems of tuberculous infection.

The morbidity and mortality rates of tuberculosis have been falling for years, with only occasional interruptions due to war conditions (Table and Fig. 1).

Deaths from Tuberculosis in 1938

Tuberculosis (all forms)	26,176
,, (respiratory)	21,930
Crude death rates at all ages to a million living:	
Tuberculosis (all forms)	635
,, (respiratory)	532

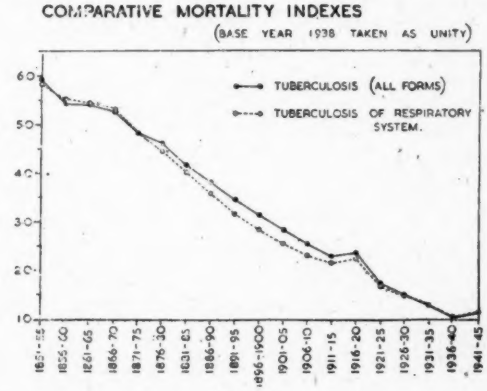

FIG. 1

It would be encouraging to be able to find recorded on the chart sudden drops in incidence or mortality produced by the introduction of this or that public health measure or this or that new treatment; but no such correlation can be presumed, although it can be with the general rise in the standard of living, nutrition, and housing. The wartime increases of morbidity and mortality both in the last war and in this one indicate the importance of malnutrition and crowded conditions on the spread of communicable diseases, especially tuberculosis, and suggest that when everyone has enough room in which to live, enough to eat, and enough room in which to work the incidence of tuberculosis will diminish to vanishing-point. There is nothing improbable in the eradication of tuberculous

disease by non-specific hygienic measures alone. It would only be following the path taken by typhoid fever, typhus, dysentery, and a host of other diseases, in which good plumbing, pure water, and cleanliness have achieved more than all the inoculations and treatments devised by doctors.

We cannot afford to wait even if the mortality and morbidity are rapidly falling. There are still some 30,000 deaths a year from the disease in England and Wales alone. There are some 60,000 new cases notified yearly and certainly many more unnotified, and also some quarter-million cases under treatment and observation. The incidence of the disease is greatest amongst the young and active with their most useful years in front of them. There are few of us who cannot remember young and brilliant men and women among our acquaintances who have been first crippled and then killed by this disease. It is still the most important cause of serious disease in the country. There are many diseases of which the aetiology is uncertain which can only be defeated, if at all, by long and patient research, but diseases which are caused by known infective processes of a bacterial nature should not be beyond our powers of control. It is for the Minister to bring all the efforts of the medical profession to a close focus on the disease with the aim of abolishing tuberculosis in these islands in our time. The primary object of such a campaign must be the elimination of tuberculous infection. Is this possible? I believe we can go a long way towards it.

I will start by considering the easiest problem first—that of eliminating bovine infection. If it is found possible to do this the more difficult problem of eliminating human tuberculosis might be nearer to solution.

Bovine Infection

In 1945, according to the report of the Minister of Health, 10,510 new cases of non-respiratory disease were notified and 4,059 deaths were reported from tuberculosis of organs other than the lungs.[1] It is impossible to say how many of these cases suffered from bovine infection. Dr. W. A. Lethem states that probably 70% of the cases recorded as non-pulmonary are in fact caused by the bacillus of human infection.[2] It is probable that this is not an overstatement, but it would be interesting to know what percentage of cases of tuberculosis are never notified at all in spite of the regulations. Probably bovine infection is notified less reliably than pulmonary tuberculosis. The Minister of Health in his annual report is inclined to use the figures of the deaths from tuberculosis of persons not previously notified as tuberculous as a sort of yardstick to show the reliability of notification. It is significant that in 1944 the deaths from pulmonary tuberculosis which had not been notified were less than 10% of the whole, whereas in non-tuberculous infection they were 25% of the total.[3] Where there is little or no danger of spreading infection doctors are hesitant to notify tuberculosis unless the disease is going to require special treatment involving the assistance of the Tuberculosis Officer, which is very frequently not the case in bovine tuberculosis; and the diagnosis of the disease is often presumptive, based on radiological or clinical evidence. Even if the incidence tables do not show the true morbidity of bovine disease they do show an even steeper fall in incidence than do the tables for pulmonary disease, and merely confirm what we have all observed—namely, the comparative rarity of glandular and bony tuberculosis in children and young adults in London hospital wards and out-patients compared with what we remember less than twenty years ago. The fight against bovine tuberculosis is already half won. It should require little more to win it completely.

There are two methods open to us: the elimination of tuberculosis in cattle, and the elimination of the danger from infected milk.

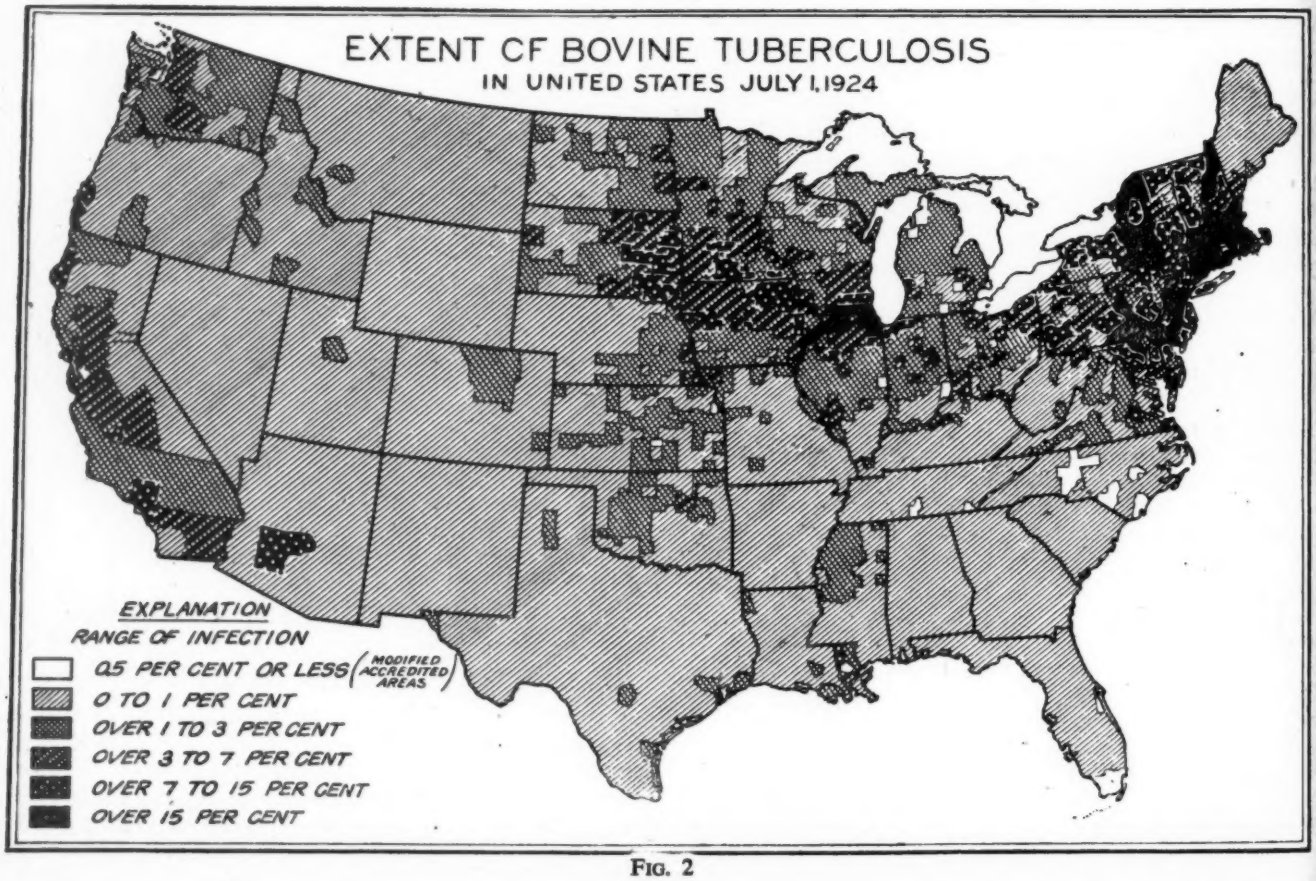
EXTENT OF BOVINE TUBERCULOSIS
IN UNITED STATES JULY 1, 1924
EXPLANATION
RANGE OF INFECTION
0.5 PER CENT OR LESS (MODIFIED ACCREDITED AREAS)
0 TO 1 PER CENT
OVER 1 TO 3 PER CENT
OVER 3 TO 7 PER CENT
OVER 7 TO 15 PER CENT
OVER 15 PER CENT

FIG. 2

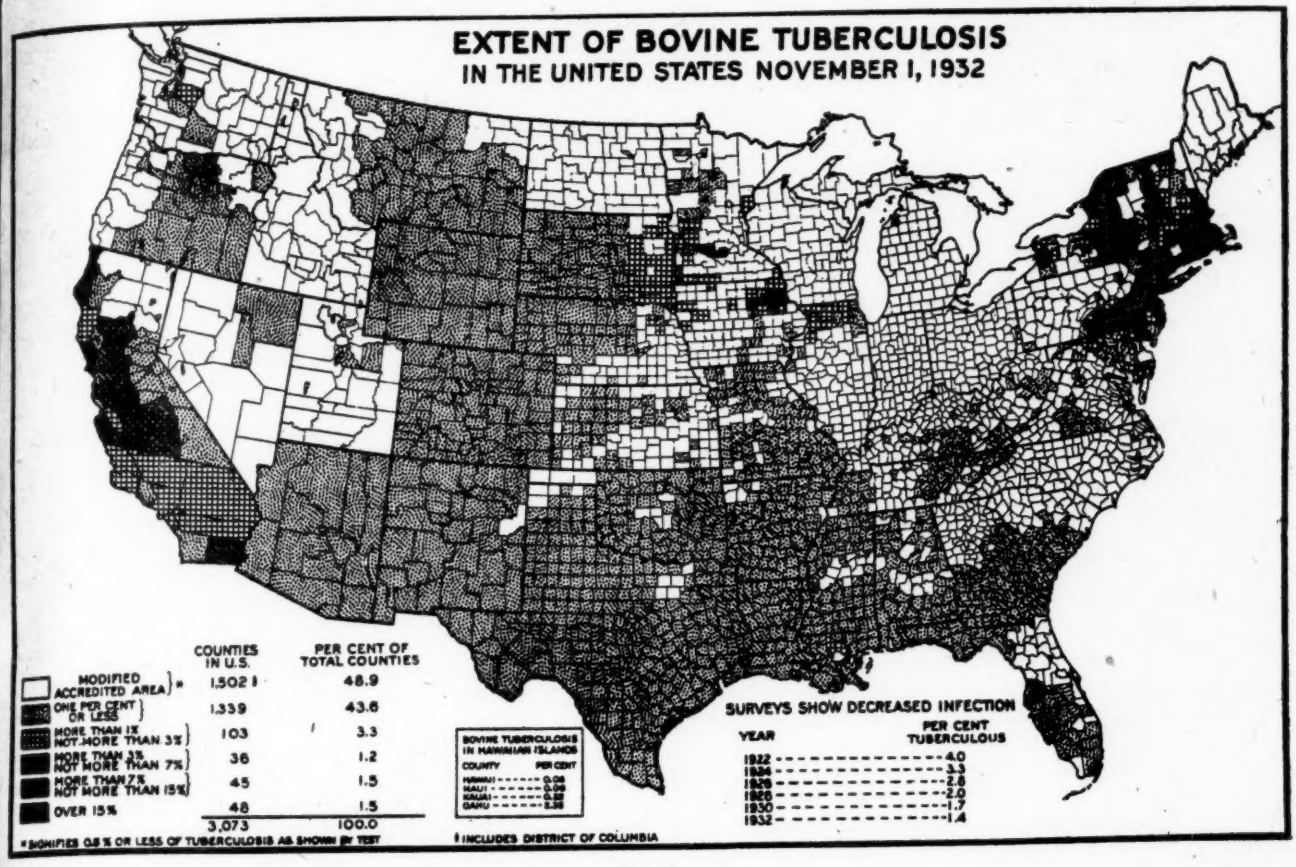
EXTENT OF BOVINE TUBERCULOSIS
IN THE UNITED STATES NOVEMBER 1, 1932
COUNTIES IN U.S.
PER CENT OF TOTAL COUNTIES
MODIFIED ACCREDITED AREA * 1,502 † 48.9
ONE PER CENT OR LESS 1,339 43.6
MORE THAN 1% NOT MORE THAN 3% 103 3.3
MORE THAN 3% NOT MORE THAN 7% 36 1.2
MORE THAN 7% NOT MORE THAN 15% 45 1.5
OVER 15% 48 1.5
3,073 100.0
BOVINE TUBERCULOSIS IN HAWAIIAN ISLANDS
COUNTY PER CENT
HAWAII 0.08
MAUI 0.09
KAUAI 0.32
OAHU 2.26
SURVEYS SHOW DECREASED INFECTION
YEAR PER CENT TUBERCULOUS
1922 4.0
1924 3.3
1926 2.8
1928 2.0
1930 1.7
1932 1.4
* SIGNIFIES 0.5 % OR LESS OF TUBERCULOSIS AS SHOWN BY TEST
† INCLUDES DISTRICT OF COLUMBIA

FIG. 3

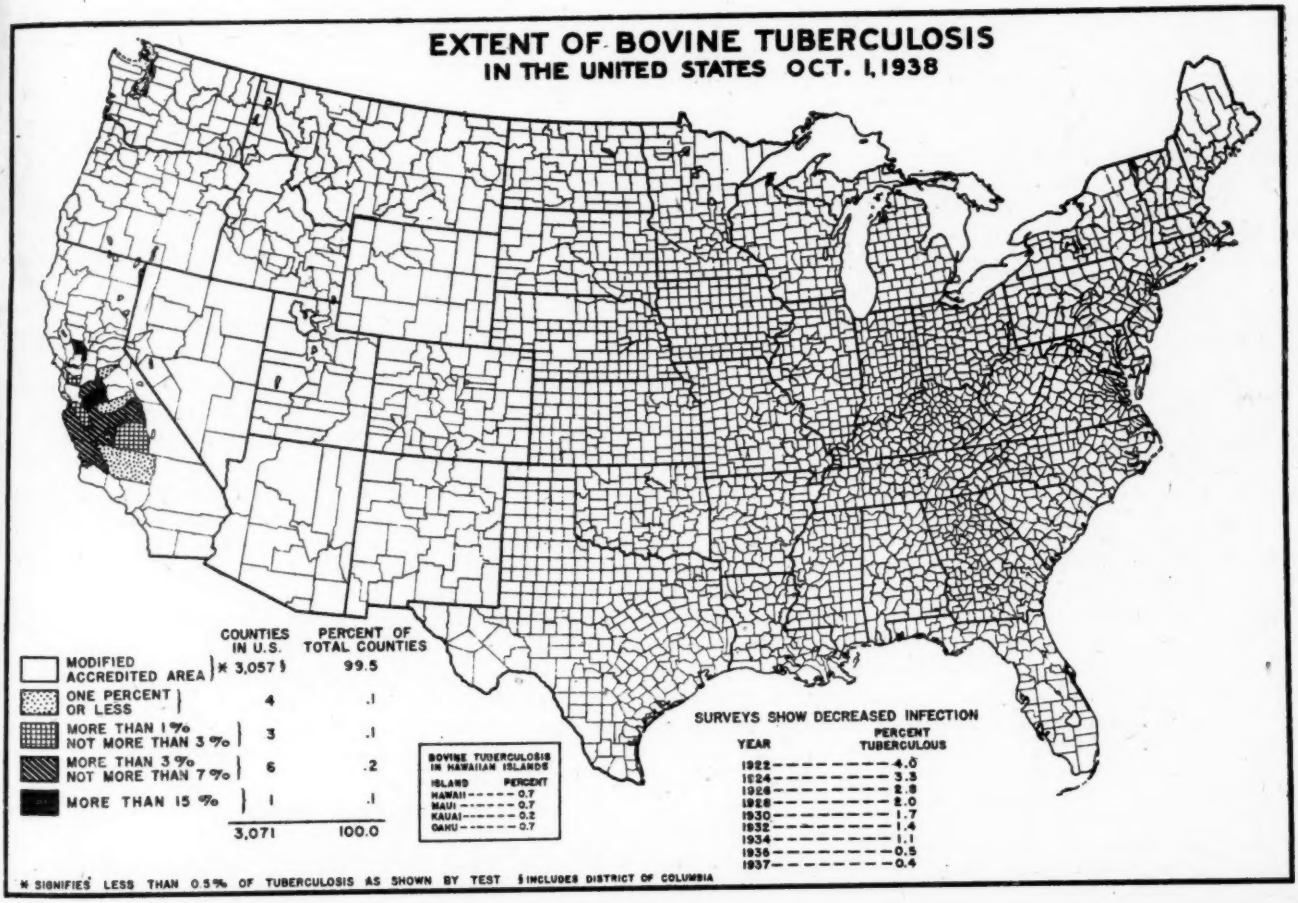
EXTENT OF BOVINE TUBERCULOSIS
IN THE UNITED STATES OCT. 1, 1938
COUNTIES IN U.S.
PERCENT OF TOTAL COUNTIES
MODIFIED ACCREDITED AREA * 3,057 † 99.5
ONE PERCENT OR LESS 4 .1
MORE THAN 1% NOT MORE THAN 3% 3 .1
MORE THAN 3% NOT MORE THAN 7% 6 .2
MORE THAN 15% 1 .1
3,071 100.0
BOVINE TUBERCULOSIS IN HAWAIIAN ISLANDS
ISLAND PERCENT
HAWAII 0.7
MAUI 0.7
KAUAI 0.2
OAHU 0.7
SURVEYS SHOW DECREASED INFECTION
YEAR PERCENT TUBERCULOUS
1922 4.0
1924 3.3
1926 2.8
1928 2.0
1930 1.7
1932 1.4
1934 1.1
1936 0.5
1937 0.4
* SIGNIFIES LESS THAN 0.5% OF TUBERCULOSIS AS SHOWN BY TEST † INCLUDES DISTRICT OF COLUMBIA

FIG. 4

If the country were immensely rich and there was a ready source of uninfected fresh stock the problem could be solved by mass slaughter of infected cattle. In 1934 the report of the Cattle Diseases Committee of the Economic Advisory Council stated that about 40% of cattle react to tuberculin and are therefore presumed to have contracted tuberculosis.[4] The post-mortem figures in abattoirs tended to support this figure, although Mr. J. N. Ritchie in 1945 suggested that the figure for infection of cattle was now probably nearer 30–35%, with a progressive downward trend.[5] Britain and Denmark are said to have the highest incidence of bovine tuberculosis of any European countries, but I suspect that this is only because they keep the most accurate and careful records. The percentage of infected cattle in the United States has never been as great as the percentage in this country, but the achievement of the Tuberculosis Eradication Section of the United States Bureau of Animal Industry has been remarkable. I can best illustrate their results by means of Figs. 2–4.

In 1932 the modified accredited areas represented 48.9% and in 1938 99.5% of the total counties. The white areas on the maps represent modified accredited tuberculosis-free areas where the incidence of bovine infection as shown by the tuberculin test is less than 0.5%. The only area still waiting to be cleared up is part of California, where I gather Dr. A. E. Weight, who is in charge of this great project, meets with a certain amount of active and passive resistance to his measures. Incidentally, in the early days of this campaign the Militia had to be called out on several occasions before the veterinary surgeons could do their work. Propaganda has caused a change in public opinion, and the success of the campaign has now almost eliminated opposition; the survey which produced the map of 1938 involved tuberculin tests on 26,000,000 head of cattle, which gives some idea of the task in a country over 50 times the size of England and Wales. The method adopted was mass tuberculin-testing with killing of reactors. Compensation at a nationally fixed rate was paid to owners of slaughtered cattle. Cattle were not allowed to cross a State boundary until they had been tuberculin-tested and proved to be non-reactors. In 1908 the overall average of infected cattle was 10%; in 1936 it was 0.7%. The effect on the human mortality rate from non-respiratory tuberculosis was that it fell from 22 per 100,000 of the population in 1916 to 5 per 100,000 in 1937, and since these figures include cases of tuberculous meningitis of human origin they are all the more striking. America is justly proud of its achievement in almost eradicating bovine tuberculosis, and we have no right to complain because their troops were advised not to drink English milk.

It is hardly the time to suggest wholesale slaughter of British cattle, and the slaughter of reactors is probably wasteful since it is not certain that all animals which react to tuberculin are infective, although they have presumably been infected. With a possible 40% of cattle infected in a time of scarcity, eradication by slaughter is a bigger proposition than in a country with 10% infected in a time of plenty. Short of slaughter, are there any other methods of preventing the spread of bovine infection? Sir William Savage has suggested one method—namely, the formation of non-reactor and reactor herds.[6] Non-reactor herds are already in existence as T.T. herds, but he suggests forming herds of so-called healthy reactors which could be kept under close clinical supervision for the elimination of clinical cases and kept under special sanitary conditions—a sort of sanatorium herd of cows with segregation of the newly born calves and careful pasteurization of the milk. Another suggestion made by the Committee on Animal Disease in 1934 involves the formation of tuberculosis-free areas. A start might be made with Wales or self-contained areas of Scotland, and the areas already far on the road towards freedom from tuberculosis could then gradually spread over the country. Success in one large area would have a catalytic effect on all the rest.

Some progress is being made with B.C.G. vaccination of non-reacting calves and the building up of vaccinated herds. More could be done to detect animals excreting tubercle bacilli in their milk by taking specimens of milk and tracing infected milk. All this means that more veterinary surgeons will have to be trained, for the number is already inadequate for the comparatively small number of cattle in T.T. and attested herds. A necessary part of any plan is to improve the housing and living conditions of herds, which, though improving generally, are often deplorable.

The present financial and economic conditions will, however, prevent the enforcement of many necessary reforms and delay the eradication of bovine tuberculosis at its source. Fortunately there is no need to wait for this, since bovine infection in man can be completely eradicated by the pasteurization of milk.

Pasteurization of Milk

It is amazing that this country, which claims, and I believe claims rightly, to be a pioneer and leader in hygiene and preventive medicine should lag behind other countries in the enforcement of this life-saving measure. Whatever may be the reasons which have prevented the adoption of pasteurization, it should be the primary duty of the Minister of Health to introduce legislation to enforce universal sterilization of milk, against which there can be no argument of fact but only arguments of a spurious economy. Medical authorities, the Medical Research Council, the Royal College of Physicians of London, the British Medical Association, and experts in hygiene have recommended its adoption for years. Vast areas of America and Canada have shown the way. The Minister has a chance of making a spectacular and effective contribution to the health of the country. I cannot put it better than does Professor Wilson, who says in his book, *Pasteurization of Milk*: "To refuse to act on this knowledge and to allow the continuation of a wholly unnecessary amount of suffering, invalidity, and death may be justifiable on grave economic grounds but can no longer be excused on the plea of ignorance except by those who, through natural or acquired defect, are too blind to see or too dense to understand."[7]

One of the factors which so far may have prevented the introduction of legislation is the fear that pasteurization would run counter to the production of accredited and T.T. milk and therefore to the eradication of bovine infection in animals. That has not been the case in America and Canada, and the spread of accredited and T.T. herds can continue to be encouraged by bonus payments. Raw milk is the vector of many diseases other than tuberculosis, and its sale should be no more legal than the sale of infected meat or contaminated water.

The eradication of bovine tuberculosis is the acid test of our sincerity in dealing with tuberculosis. If the remedy is in our hands and we do not apply it the responsibility is ours—and the Minister's. We do not know what will happen when we are successful in eradicating bovine tuberculosis. It is comparatively easy to get figures of clinical infection by the bovine bacillus. What we do not know is what percentage of the population has been infected by such bacilli without clinical symptoms worthy of note. How many of the transient adenitis cases and undiagnosed infections of childhood are due to "bovine infection"? How much of our acquired immunity to human tuberculosis do we owe to healed bovine infection? Shall we in casting out one devil take unto ourselves seven devils, each worse

than the first? Are we by eliminating bovine infection eliminating a sort of natural or wild inoculation of bovine B.C.G.? We do not know, but it is a risk which we can surely take if we are at the same time trying to eliminate infection with the *Bacillus tuberculosis* of human type.

No such direct attack can be made on the human infection as is possible with bovine infection. It must of necessity be a lengthy process, but I believe if tackled energetically it might be possible to extinguish it in less than a generation.

The campaign against tuberculosis has already been carried far along the road to success by many organizations, many individuals, and by social legislation and social evolution. The campaign has two possible methods of attack: by increasing the powers of resistance and by eliminating the possibility of infection.

B.C.G. Inoculation

The only method of increasing our powers of resistance in any specific way at present known to us is by the use of attenuated vaccines, especially living ones. It is remarkable how little work seems to have been done with B.C.G. in this country, considering the immense amount done in France during the past 26 years and in the Scandinavian countries. It is also remarkable, considering the length of time that inoculations have been given, that we still have so little certain knowledge of the effect which mass inoculation might have on the morbidity and mortality from tuberculosis. A short series of favourable but much criticized figures from France,[8 9] the Gothenburg series of Wallgren[10] (done without controls), the controlled American series of Park and Kereszturi,[11] and the observations of Heimbeck,[12] of Ustvedt, of Rinvik,[13] and a few other observations on small groups make up the sum total of the available published evidence which has built up among those with most experience of the use of B.C.G. an optimism which runs through all the range from immoderate to moderate. It is not surprising that the figures for infants and children are so difficult to obtain and so difficult to interpret.

It is easy enough to prove the value of B.C.G. in animals kept under standard conditions. The human subjects of an investigation have to be observed for many years, during which it is impossible to control their subsequent exposure to infection, their varying degrees of natural resistance, and all those factors, chemical, nutritional, mental, and physical, which contribute to fluctuations in resistance in a manner which we only dimly understand. The figures of Heimbeck[12] on nurses in 1936, and more recently of Ustvedt, do however give us some suggestive evidence. Heimbeck found that, among 571 nurses who showed a positive von Pirquet reaction, only 4.2% (24 cases) showed any evidence of tuberculosis during the period of observation and that no patients died. On the other hand, among 275 nurses who had a negative reaction 35.2% (97 cases) showed evidence of tuberculosis and 10 of these 97 died. He then took a group of 355 negative reactors and vaccinated them with B.C.G.: of 210 who became positive as a result only 1.9% showed evidence of tuberculosis, with no deaths; and of 102 who remained negative in spite of vaccination 23.5% (24 cases) developed tuberculosis, with 3 deaths.

Ustvedt's figures for a group of nurses and students, given at the meeting of the Tuberculosis Association at Edinburgh last summer, showed that of 668 positive reactors 5.2% developed the disease, with a death rate of 0.18%; that among 284 negative reactors there was a morbidity of 33.8%, with a death rate of 4.2%, during a period of observation similar to that of the first group. Hewing established a control series: he treated 341 non-reactors with B.C.G., and this group showed a subsequent morbidity of 4.1% and a death rate of 0.3%. The morbidity may be subject to differences of interpretation, but if only the mortality from tuberculosis is considered the evidence is striking although the numbers are small. The available evidence leaves the general impression that B.C.G. does produce some immunity in human beings, and there is renewed interest in the subject in this country, largely the result of the visits of Scandinavian physicians since the end of the war. Now is the time to start large-scale controlled experiments here either on infants or on adult groups of exposed individuals such as nurses and medical students.

It is not probable, however, that B.C.G. will in fact play a major part in the campaign against tuberculosis. Even in the countries which have studied the problem most closely mass inoculation has not been tried on any large scale and most workers hesitate to apply it. Among the most valid reasons for this hesitation are the doubts concerning the duration and degree of the immunity produced and the doubts concerning the relation the development of allergy bears to immunity; the occurrence of cold abscesses of the skin in a small percentage of cases, especially in children, and the difficulty of standardizing strains of B.C.G. are additional factors.

Whatever the place of B.C.G. inoculation in the prevention of tuberculosis may be it cannot absolve us from the need to eliminate known infection, since at the very best acquired immunity is never complete but always relative.

Mass Radiography

There are only two possible human sources of tuberculous infection: one is the known case of pulmonary tuberculosis; the other is the more dangerous and possibly more common undiagnosed ambulant case. Mass radiography is the key to the problem of the latter group: the Medical Research Council Report, "Mass Miniature Radiography of Civilians," shows that in the fairly large groups examined by various teams significant lesions were found in not less than 1% of the apparently normal persons examined, that about one-third of these were in need of treatment, and that one-half of this latter group had tubercle bacilli in their sputum. These are terrifying figures, for if this distribution were equal throughout the 41,000,000-odd inhabitants of England and Wales alone it would mean that there were over 100,000 as yet undiagnosed cases of tuberculosis in need of treatment of which about a half were a source of infection for their fellows. Fortunately, this even distribution is extremely unlikely, as the M.R.C. survey was carried out entirely on volunteers in Greater London in factories and Government offices. The figures do, however, mean that there are in wide areas throughout the country thousands of undiagnosed cases capable of spreading infection. It would at first sight seem obvious that mass radiography units should be set up throughout the country, at least in all urban areas. To provide the apparatus and train the teams would take time but would not be impossible. I imagine that in two years the organization could be perfected, and there is no doubt that this would be desirable.

Shortage of Beds and Staff

It is therefore all the more tragic that at the present time the effects might be disastrous. Medical services are quite inadequate to deal with even the present number of cases: the sudden discovery of thousands of others might bring about complete breakdown. There are neither the doctors nor the ancillary staff nor the beds necessary for the proper treatment of the cases already diagnosed. The number of beds available is actually falling because of difficulties in providing the hospitals and sanatoria with nurses and

domestic staff, but even before the war the number of beds was very inadequate, and the quality of the beds was often, and still is, lower than it might be. The Ministry of Health's figures for June, 1947, show for England and Wales 32,801 possible beds for the treatment of tuberculosis, with a waiting-list of nearly 8,000. The waiting-list, long though it is, does not really give the true picture. Hundreds, possibly thousands, of cases are not even put down on the waiting-lists because the bed situation appears so hopeless, and the patients are therefore treated at home for want of better arrangements. There are probably also a fairly large number of patients who have not been notified for various reasons although they should have been. The death of 3,468 unnotified cases of pulmonary tuberculosis in 1945 gives only a small idea of the number of unnotified cases in the country. Because of the long waiting-lists cases are not kept in sanatoria as long as desirable, since their physicians are always conscious of the untreated cases awaiting admission. It also means, unfortunately, that only the earlier cases are admitted at all, because more can be done for them individually. The worst cases, the most dangerous from the infective point of view, are left at home.

The present housing situation produces tragic situations which tuberculosis officers are powerless to remedy owing to the shortage of beds. Shortage of beds means the spread of infection among contacts and delay in treatment, the effectiveness of which is in inverse proportion to the delay in initiation. Can this primary problem be solved? I believe it can be if a determined effort is made. In the first place, if every general hospital reserved even 5% of its beds for the primary treatment of tuberculosis a great deal could be achieved. Such hospitals already carry the staff capable of assessing the cases and, if necessary, initiating collapse therapy, which assists recovery and helps to make the sputum tubercle-free. Even if the shortage of sanatorium beds makes it necessary to discharge the patient to his home to await admission after his initial treatment much valuable time will have been gained, and in addition it will have been possible to teach the patient the elementary principles of hygiene, so necessary to prevent the spread of the disease when the patient once more joins his family or fellows. Admittedly these patients will exclude an equivalent number of other types of cases, but there are few types which are so dangerous to the community if left unadmitted and untreated and for which so much can be done by early and efficient treatment. Many of the non-tuberculous cases which now fill our hospital beds could be as well treated in out-patient departments if these were better organized, better equipped, and more lavishly staffed. There is no other type of case for which it is so difficult to secure admission to the general hospitals as the tuberculous case—largely, of course, because of the danger of infection, but also because so many physicians are coming to regard pulmonary tuberculosis as being as much outside their responsibility as the case of syphilitic infection now is.

Special Tuberculosis Hospitals

In addition to the provision of beds by general hospitals I believe that special hospitals for the tuberculous should be a high priority in every region. The buildings probably already exist as E.M.S. hospitals or E.M.S. attachments and as disused fever hospitals. The main problem is staffing. The medical staff I believe to be already available or, if the appointments were there to be filled, could readily be trained. There are more young men being trained and having an interest in work on diseases of the chest than ever before, but the real problem is the nursing and domestic staff. It is true that surgical treatment has complicated the nursing problem in sanatoria and tuberculosis hospitals, but in general the nursing staff do not need to be so numerous or so skilled as in general hospitals, and here is a great opportunity for the use of auxiliary nurses. More use could be made of convalescent patients, or employment might be given to patients whose treatment is completed and the domestic staff be reinforced with displaced persons. Desperate diseases sometimes need desperate remedies. I believe that with an appeal to the imagination and to the pocket the staff could be found. It depends on whether the fight against tuberculosis is treated as an exceptional emergency, which I believe it is, or is allowed to be swallowed up in the ordinary tangle of priority precedents and resulting frustration.

The great advantage of tuberculosis hospitals is that they can be local, and they have the great advantage over sanatoria that the patients can be near home, can have visitors, and can be under the eye of the tuberculosis officers. I do not suggest that these hospitals can altogether replace sanatoria, but they can make the patient more able to take advantage of sanatorium treatment if he is lucky enough to have any. I do not underestimate the advantages of country air, country food, and pleasant scenery, but fortunately the days are long past when it was considered that tuberculosis could only be treated among pine trees and at a freezing temperature. If sanatoria can be provided for all, so much the better; but, provided that the doctors are skilled, tuberculosis can be nearly as well treated within sound of Bow Bells as it can in the country.

The Services should treat all their own cases for at least a year after diagnosis instead of discharging them into civilian life. They can provide the staff, and the buildings are available. I know that by agreement with the Ministry of Pensions and the Ministry of Health they do maintain a small number of beds for tuberculous cases because of the failure of the civilian service; but they could do much more, and I consider that they should accept responsibility for Service pensioners at least for a number of years until the civilian service is more adequate. The Services would, I believe, willingly do much more than at present, but their budgets have been cut to the bone so that they are financially unable to take on what they reasonably regard as a civilian commitment. Surely they should have a special additional grant of money for this work.

There is nothing revolutionary about the experiment of providing institutional treatment for patients with tuberculosis, but it is an experiment that has never been tried in this country, and the results are incalculable.

Social Implications

One of the most useful modern developments of the anti-tuberculosis campaign is the attention given to the social side of the disease. It often happened, and still does happen, that patients restored to health by good treatment are forced by lack of advice, lack of opportunity, or because of financial stringency to return to the same work and the same conditions which led to their breakdown in health. After-care committees, public and private organizations, and treatment allowances are helping to prevent this, but they need further development. The Minister has stated to a deputation that under the new Act treatment allowances for tuberculous patients will have to fit into the general pattern of sickness allowances, whatever that may mean. I hope that he will remember not only the benefit to the individual but the special necessity for keeping infective cases out of unsuitable industries. Special industries and special factories are being developed for tuberculous patients. This movement is only in an embryonic form, but I believe it is capable of great development. County branches in connexion with colonies are also capable

further development, but I do not think that tuberculous patients in great numbers are prepared to live permanently separated from their fellow men. The one thing tuberculous patients wish to do is to live like their fellows and not be treated as we at one time treated our lepers—incidentally with apparent success.

Conclusion

I have made no new suggestions for the eradication of tuberculosis, but I am suggesting a campaign on a scale and of an intensity that have not so far been possible.

The Act gives the Minister his opportunity to appeal to the imagination of the country and make a solid contribution to the health of the people by concentrating on the elimination of a preventable infection. Nearly a quarter of our doctors served in the Forces in the late war and were brought into closer touch with preventive medicine than ever before. They have seen at first hand epidemics of typhoid, of typhus, of dysentery, of diphtheria, of smallpox, of malaria, of poliomyelitis, and a host of other diseases, and have taken an active and successful part in their prevention and suppression all over the world. They await the National Health Service with doubt and speculation. An imaginative and successful campaign against tuberculosis would show that the National Health Service means more than interference with general practice, subsidies to hospitals, and a curtailment of the liberty of the individual.

Figs. 2, 3, and 4 are reproduced from Arnold R. Rich's *Pathogenesis of Tuberculosis* (Thomas, Springfield, Ill.).

REFERENCES

[1]Statistical Review of England and Wales (1945). Registrar-General, London.
[2]Lethem, W. A. (1946). *Med. Off.*, **75**, 82.
[3]Summary Report of Ministry of Health (1945). London.
[4]Tuberculosis in War Time. Med. Res. Coun. Spec. Rep. Ser. No. 246 (1942). London.
[5]Ritchie, J. N. (1946). *Proc. R. Soc. Med.*, **39**, 216.
[6]Dalling, T. (1946). Ibid., **39**, 214.
[7]Wilson, G. S. (1946). *Pasteurization of Milk*. London.
[8]Calmette, A. (1927). *Vaccination préventive contre la Tuberculose par "B.C.G."* Masson, Paris.
[9]Chaussinand, R. (1931). *Vaccination contre la Tuberculose par le B.C.G.* Paris.
[10]Wallgren, A. (1941). *Arch. Kindheilk.*, **122**, 65.
[11]Park, W. H., Kereszturi, C., and Mischulow, L. (1933). *J. Amer. med. Ass.*, **101**, 1619.
[12]Heimbeck, J. (1936). *Tubercle*, **18**, 97.
[13]Rinvik, R. (1944). *Acta paediatr., Stockh.*, **32**, Suppt. p. 42.

THE HEALTH AND MUNICIPAL HOSPITAL SERVICES OF LONDON

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The organized public health service of this country is just a century old. Never before in its history has such a change occurred as will happen on July 5, 1948. The background of its development may be divided into three phases. During the first phase the main attack was on environmental causes of disease, particularly the infectious diseases, including cholera. During the second the services to promote the health of school-children, of expectant and nursing mothers and young children, and to prevent the spread of tuberculosis and venereal disease were developed. During the first phase health authorities erected fever hospitals, and during the second sanatoria and maternity hospitals.

During the third phase, which began in 1930, an effort was made to integrate the public hospital service, which had grown up as part of the Poor Law system, with the preventive medical work of the major local authorities. Applying this to London, it should first be explained that for local government purposes there are several Londons, and this article refers only to the Administrative County of London. It has a population of 3,389,680, and is increasing as those evacuated during the war return, but its pre-war population of over 4,000,000 may never be attained again. The County includes within its boundaries the City of London and the 28 Metropolitan Boroughs.

The London County Council replaced in 1889 the Metropolitan Board of Works (1855-89), and ten years later the parishes and vestries disappeared as public health authorities and the 28 Metropolitan Boroughs were created. To complete the background it must be mentioned that until 1930 there were in the County of London 25 Boards of Guardians. Among their responsibilities was the care of the destitute sick, and they had provided a considerable number of hospitals, some quite modern. They also provided a domiciliary service for the sick by means of District Medical Officers. There was also the Metropolitan Asylums Board (established in 1867), which provided hospitals for certain mental and fever cases, including smallpox, which were unsuitable for retention in the Poor Law infirmaries and for tuberculosis and long-stay cases in children. The Boards of Guardians were also the authorities for vaccination and for the registration of marriages, births, and deaths.

Reference must also be made, in order to get a complete picture of the public health and medical services of London, to the London Port Sanitary Authority, established in 1872 and administered by the Corporation of the City of London; the Metropolitan Water Board, set up in 1903; and the London Insurance Committee, formed in 1912. The development of the various services can now be given.

The County and the Boroughs.—The distribution of functions between the County and the Borough followed no broad pattern. I will say no more about the City other than that it has all the duties and powers of a Metropolitan Borough and also some of those of the County Council.

The L.C.C., 1889–1930

Until 1930 the main responsibilities of the County were the following. The Council was (and is) the main drainage authority. It is the housing authority for large schemes, both for slum clearance and for building houses, either inside or outside the County, for general housing. It makes by-laws relating to sanitary matters, but they are administered by the Boroughs. It is the town-planning authority; and it provides large open spaces and open-air swimming pools.

The above concerns the environmental services, but the personal health services were of great importance and were growing rapidly. The County Council has been the Education authority since the abolition of the School Board in 1904. In 1907 the school medical service was born. It began simply as inspection and the selection of children who needed special education because they could not profit by the education provided in ordinary schools. Thousands of children were referred for medical treatment. Their parents often could not afford private treatment. They flooded the out-patient departments of the hospitals, to the discomfiture of the staff—so much so that one exasperated ophthalmic surgeon, after seeing the hordes of children overcrowding his department week after week, relieved his feelings by writing on the blackboard in the waiting-hall a phrase which ended, "Damn the L.C.C."

There was a tussle at this stage between Dr. James Kerr, the Council's school medical officer, and the B.M.A., led by Sir Victor Horsley. The former wished the Council to provide its own school clinics for the treatment of school-children. The B.M.A. urged that voluntary hospitals and

voluntary committees, to be set up to provide school clinics, should be subsidized to do the work. Horsley appealed to the Education Committee of the L.C.C., who agreed with him, and it is only quite recently that the L.C.C. has begun to provide school clinics of its own. The clinics, or special hospital sessions subsidized by the Council, were mainly for the treatment of minor ailments, the prescription of spectacles, and dental treatment. Soon, however, special arrangements had to be made for the treatment of otorrhoea, for ringworm, and for the removal of adenoids and enlarged tonsils. In 1924 Dr. C. J. Thomas was concerned at the large proportion of children whose names appeared on the list of those absent from school for three months or more because they suffered from rheumatism. As a consequence the Council arranged with the Metropolitan Asylums Board for a number of beds to be set aside for them, and this was the beginning of the Council's anti-rheumatism scheme which in 1939 provided 800 beds and 20 rheumatism supervisory centres. The Council was almost unique among local education authorities in relying largely on part-time instead of whole-time staff for school medical inspection and treatment.

Since 1902 the Council has been the supervising authority under the Midwives Act. In 1917 the Council became responsible for devising and administering a scheme for the better control of venereal disease. It operated by subsidizing special clinics at voluntary hospitals, though now it administers two clinics direct. It also provided facilities free of charge for the examination of pathological specimens for, and the free issue of arsenicals to, private doctors, the latter being limited to those who complied with the requirements, as to experience, of the Regulations of the Ministry of Health.

An important duty placed upon the Council in 1926 was the registration and inspection of nursing-homes. The Council is the authority for London under the Mental Deficiency Act. These duties include the "ascertainment" of the mentally defective and the taking of steps to bring the cases before a "judicial authority" and to deal with those under "supervision" or "guardianship."

The accident ambulance service of London was established in 1915 on the initiative of the late Sir William Collins, who had a few years previously introduced a Bill into Parliament to give the necessary authority. Until 1930, when it was transferred to the Public Health Department and combined with the "removals" ambulance services of the M.A.B. and the Metropolitan Boards of Guardians, it was administered by the London Fire Brigade. The Council was the "institutional" authority under the Tuberculosis Scheme and subsidized the Boroughs to provide dispensaries.

The Boroughs, 1899–1948

A subsequent section deals with the work of the L.C.C. between 1930 and 1948, but the functions of the Metropolitan Boroughs can be described without any break at the former year, as the Local Government Act, 1929, which brought such a heavy load of work to the L.C.C., added to the Metropolitan Boroughs only vaccination and the registration of births, marriages, and deaths from the Boards of Guardians and a few years later the following services which up to then had been the responsibility of the L.C.C.: licensing of offensive businesses, slaughterhouses, etc; the licensing and inspection of common and seamen's lodging houses; and the Child Life Protection sections of what is now the Public Health (London) Act, 1936.

The Boroughs, however, have had very important public health duties ever since they were formed in 1899. They administer Acts and by-laws relating to drainage, sanitation, and local sewers. They are responsible for the suppression of nuisances, including those caused by smoke and noise. They supervise health conditions in workshops. They deal with the repair of houses under the Housing and Public Health Acts. They can close insanitary houses and take action to demolish slum areas and rehouse the occupants. Usually they limit their activities to small areas and leave the large ones to the L.C.C. They can, and do, build houses for general purposes and they exercise general supervision over the construction of new houses. They provide mortuaries, burial grounds, and crematoria. They control the food supply and take samples for analysis. They deal with "unsound" food. They register and inspect dairies, cowsheds, and places where meat food products are prepared. They ensure the sanitation and hygienic condition of shops. They administer the Rats and Mice Destruction Act and the regulations about rag flock. They collect and dispose of household refuse, disinfest houses and persons, and disinfect rooms, bedding, and clothing.

The Borough Medical Officer of Health receives notifications of infectious diseases and is responsible for endeavouring to prevent their spread. Cases of food-poisoning are also notified to him.

An important part of the work of Borough Health Departments is the administration of schemes for maternity and child welfare. Notifications of births are sent to them, but in most cases they have already been in touch with the mother by her attendance at a Borough antenatal clinic. Some Boroughs provided maternity homes, and a few until 1936, when the domiciliary midwifery service was transferred to the County, employed midwives. There are 154 infant-welfare clinics controlled by Borough Health Departments, though some are subsidized voluntary agencies. They employ nearly 400 health visitors. The ramifications of maternity and child welfare are great, but the service has developed unevenly in the different Boroughs. The activities include immunization against diphtheria and whooping-cough, beds for difficult-feeding cases, subsidies to voluntary hospitals for maternity cases, provision for admission to convalescent homes, dental care of mothers and children, ultra-violet light clinics, birth-control clinics, provision of fire-guards, etc.

The Boroughs have wide powers to provide medical services. A few provide a dental service for the general public and many have established foot clinics. Provision for the treatment of rheumatism is made by some. Another activity of the Boroughs is health education, and first-class work has been done by most.

The L.C.C., 1930–48

In April, 1930, the work of the Public Health Department of the L.C.C. was increased enormously. By the Local Government Act, 1929, the Poor Law Guardians and the Metropolitan Asylums Board were abolished and their duties, with minor exceptions, transferred to the L.C.C. Seventy-seven hospitals and 20,000 staff were transferred to the Public Health Department. They included 27 acute general hospitals containing large numbers of beds for maternity cases and wards for the acute illnesses of children, 13 hospitals for the chronic sick, 15 for fevers, 9 for the tuberculous, 4 for long-stay cases in children, two colonies for the epileptic, 3 for convalescents, and 4 others. The total number of beds was 37,202. They were a very "mixed bag." Some were recently erected modern hospitals; others were the worst examples of Victorian and even pre-Victorian hospital architecture. Most, however, contained some recent extension. Staffing was equally varied, though none came up to a standard which would

satisfy their new masters. The provision of special services left much to be desired. Except for the M.A.B., which had appointed a Director of Pathology for its hospitals, the facilities for laboratory investigation were almost non-existent. *X*-ray departments were poor, though at Lambeth Hospital there was a modern *x*-ray therapy unit under Mr. Stebbing. Another common defect was the poor accommodation for out-patient work and for physiotherapy. There was a great lack of single-bedded or small wards even in the fever hospitals. The Council first took stock of the position and marshalled the facts. This was done by a series of Departmental Committees set up by my predecessor Sir Frederick Menzies. The membership was drawn from all branches of the Council's own service and often included also outside experts. The first forward move was to increase the pay and the number of nurses. Then followed a review of all other staff. The medical staff was strengthened; consultants and pathologists were appointed. Increases in the staffs of cooks and porters were not forgotten. Meanwhile building plans were prepared, largely on the advice of a Committee on Hospital Standards, which discussed at length every aspect of hospital construction and equipment. Model plans of ward blocks, maternity units, operating theatre suites, out-patient departments, x-ray departments, kitchens, laundries, and nurses' homes were prepared. Much new construction and a large amount of reconditioning were carried out. It was remarkable how greatly an old ward block with obsolete sanitation could be improved by skilful planning.

Special units were established in which the leaders of the profession worked. Lord Dawson, Dr. Mansell, and Mr. O'Shaunessy started a cardiovascular unit at Lambeth Hospital. Sir Thomas Dunhill worked at the thyroid unit at New End Hospital, Sir Comyns Berkeley continued his work at the North-Western Hospital for the radium treatment of cervical carcinoma, and Sir Harold Gillies worked at St. James's Hospital. New ward equipment was designed and obtained in large quantities. The building programme was speeded up, and in 1938 nearly £1,000,000 was spent on capital constructional work. A proposal to spend £820,000 for a new 600-bed hospital at Tooting was about to be approved, after some three years' hard work on the plans, when the blow fell and all our energies had to be diverted to preparing the hospitals for war and intensive bombing.

The Impact of War

When war was declared many of the patients and staff from the central hospitals were transferred to the peripheral hospitals. But an increasing proportion of the acute civilian sick of London was admitted to the Council's central hospitals, as so many beds in the voluntary hospitals were unavailable to them.

The Council's hospitals played a noble part in dealing with air-raid casualties, of whom 16,000 of the ambulance cases were dealt with. Except Pinewood Sanatorium every single one of the Council's 98 hospitals was damaged. Altogether 660 high-explosive bombs and land-mines and many thousands of incendiaries fell on them. Hospitals had to be evacuated at short notice and restored to use again as quickly as possible. The staff showed great gallantry. Unfortunately 69 lost their lives, as did 266 patients. The material destruction was enormous: 4,456 beds (including 578 in mental hospitals) were destroyed completely. On several occasions over 10,000 beds at a time were out of action as a result of bomb damage. It is the proud boast of the service that never during the war was an acute case refused admission. During the flying bomb period some 8,000 patients were evacuated to safer areas, and at a week's notice the L.C.C. opened up and took responsibility for the management of four complete hospitals all more than 200 miles from London. During the war the hospital service was by no means the sole preoccupation of the Department; all its other work had to be done. The school medical service, for example, continued for the school-children remaining in London.

There was a constant ebb and flow, depending on the amount of bombing, of children between London and the "receiving areas" to which children were evacuated. Doctors and nurses from London were lent to the receiving areas to help in the staffing of their school medical services and of the numerous sick-bays, maternity homes, and residential schools and nurseries which were hastily improvised.

A significant development occurred in 1941, when the administration of the Council's mental hospitals was entrusted to the Public Health Department. They comprised 22 institutions with more than 40,000 beds. At that time most of the mental hospitals contained blocks adapted for the reception of general cases as part of the E.M.S. scheme. The Council's Horton Hospital and the Leavesden Annexe were devoted entirely to general work. Though the administrative medical staff of these hospitals and units were Council officers, the clinical staff were supplied mainly by the E.M.S. from the large teaching hospitals, and thus began a very happy association between the voluntary and municipal sides. The same applied to "up-graded" convalescent, fever, and other peripheral hospitals, such as the Southern and Joyce Green Hospitals, Dartford; the Northern Hospital, Winchmore Hill; and Queen Mary's Hospital, Sidcup.

The Ministry of Health built temporary hospitals within the grounds of several of the Council's hospitals. One was used by St. Thomas's Hospital and another by the London Hospital when their own buildings were seriously damaged. The other hospital annexes were used as military hospitals by the Canadian, Australian, and New Zealand Forces.

It is, perhaps, inevitable that, writing in 1948, the upheaval caused by the war should occupy so much space, but many important trends and developments during the period 1930–48 must also be mentioned.

From the early days the Council expressed willingness to allow the vast clinical resources of its hospitals to be used for medical teaching, both undergraduate and postgraduate. All teaching on fevers was done in its hospitals, and there was a link between each of the undergraduate hospitals and a general hospital of the Council. Much teaching was given in obstetrics. The British Postgraduate Medical School was located at the Council's Hammersmith Hospital, and the Maudsley Hospital had been recognized in 1924 as a postgraduate teaching school in psychiatry.

During the war accommodation was found in the Council's hospitals for several voluntary hospitals whose premises had been destroyed. Flourishing clinical research committees were set up. One for the mental hospitals, the other for the general and special hospitals, but with a close link between them. An L.C.C. medical society was established which held frequent well-attended meetings.

In 1936 the Council became responsible for the domiciliary midwifery service. Mass radiography was started in 1943 as part of the anti-tuberculosis service, and two sets were operating in 1948. On the school health side increasing attention was paid to child guidance and to the provision of school meals and milk. With the end of the war medical staffing of the hospitals was examined and a large number of whole-time specialist positions created.

Acute difficulties arose from the shortage of nursing, domestic, and other staff. Few student nurses had joined the service during the war and some thousands of beds could not be reopened. Building labour and materials were

needed for houses, and little was available for hospitals. All these difficulties are, by almost superhuman efforts, being slowly overcome.

The Future

July 5, 1948, will see the end of the L.C.C. hospital service as such. The hospitals of the whole country will be transferred to the State and their administration entrusted to Regional Hospital Boards and Boards of Governors of Teaching Hospitals. It was the largest hospital service in the world under local administration. It is being broken down into four quarters, each of which will form part of one of the four Metropolitan Regional Hospital Boards—N.W., N.E., S.W., and S.E. There will be no "London: Hospital Service." Apart from the four Regional Hospital Boards each serving a quarter of London, there are 26 designated teaching hospitals or groups of hospitals in London which are independent of the Boards, thus making 30 separate hospital administrations.

Two of the L.C.C. hospitals—Hammersmith and the Maudsley—are designated teaching hospitals, the North-Western Hospital is to be a part of the Royal Free Teaching Group, and St. Pancras Hospital is added to University College Hospital. It is too soon to assess what the L.C.C. did for the hospitals transferred to it in 1930, nor would it be for me to attempt the assessment, but it may be said that, having regard to the fact that there were only about six years in which progress was possible, the hospital service was expanded and improved remarkably. It took two or three years for the L.C.C. to learn the service, and effective progress ceased in 1939.

The Act makes provision for a domiciliary medical and a general dental service free to all. This service will be administered by Executive Councils. There will be one for the administrative County of London.

The Act makes other important changes in the structure of the health services of London. It transfers from the Boroughs to the County the maternity and child welfare services so that they may be co-ordinated properly with the school health services. It continues and expands the domiciliary midwifery and ambulance services. It requires the County to provide home nursing, which it is doing by arrangement with the District Nursing Associations. It empowers them to provide a home and domestic help service. It must provide a health visiting service with enlarged functions. It repeals the vaccination laws and requires the Council to make arrangements for vaccination to be done on a voluntary basis as is the case in immunization against diphtheria. The V.D. service and the clinical side of the anti-tuberculosis service are to become the responsibility of the Regional Hospital Boards, but the Council remains responsible for the social and preventive work. The Council must submit proposals for the "prevention of illness, care and after-care," and for appointing "authorized officers" whose functions will be similar to those of the relieving officers who up to now have dealt with persons of unsound mind and arranged for them to be admitted to the appropriate institution. Another important duty of the Council will be to provide Health Centres for general medical and dental practice at which doctors and dentists under contract with the Executive Council will work. All these and the unchanged public health duties of the Council and the Boroughs are of immense importance to the well-being of London.

Considerable expansion of the old and development of new activities will be called for. The personal health services of a public health authority such as London need large-scale planning, but local application and the new service is to be largely administered from nine divisional offices, just as the school health service had to be divisionalized. Close relationship with the Borough services must be maintained. The duties of the Council cannot be carried out effectively without the closest contact with the other elements of the National Health Scheme, the general practitioners and dentists, the Regional Board hospitals, and the teaching hospitals.

London presents unique difficulties in that there are four Regional Hospital Boards and 26 designated teaching hospitals. It contains a large population, yet nevertheless it is only the nucleus of the much larger "Greater London."

Good will and an earnest desire to co-operate are evident on all sides. Many new opportunities present themselves. For the first time health officers should be able to obtain information on the total morbidity in their areas. Health officers will be relieved of the time-consuming detailed administration of hospitals, though they will need to have a substantial voice in the provision made for such classes of patient as the tuberculous, the fever and maternity case, and for school and other children. Their horizon should not be limited to the communicable diseases, but should be extended to include all preventable illness.

The past achievements of British medicine are noteworthy. If our present opportunities are grasped, if the administrative machine does not become too complicated, and if full scope is given to initiative, imagination, and experiment, then the future is indeed full of hope.

THE END OF "COMPULSORY" VACCINATION

BY

MAJOR GREENWOOD, D.Sc., F.R.C.P., F.R.S.

On July 5, not quite a year before the two-hundredth anniversary of Edward Jenner's birth, vaccination will cease to be obligatory in law. For 95 years parents have been under a legal duty to permit their infant children to be vaccinated, and from 1853 to 1899 the provisions of the law affecting parents changed but little. If a Board of Guardians obeyed the law, refusal to submit an infant to vaccination subjected its parents to penalties serious to poor people. In the early days of compulsion more than 60% of infants were vaccinated, and the proportion tended to increase down to about sixty years ago. Writing in 1888, the Medical Officer of the Local Government Board estimated that of children born in 1886 there survived in February, 1888, 689,323 vaccinated and 59,000 unvaccinated; a ratio of more than ten to one. From about this time opposition to the vaccination of infants hardened in some parts of the country, and by 1898 the proportion of infants vaccinated had fallen to a little more than 60%—roughly what it had been in the early days of compulsion.

In 1898 an amending Act, which came into force in 1899, not only reduced the formal harshness of the old law but required public vaccinators to visit the homes of the children. The proportion of infants vaccinated rose and remained above 70% for seven years. A further softening of the compulsion was effected by an Act which came into force in 1908, and by 1913 the proportion was about 50%. In 1937 the number successfully vaccinated was 34% of the births and 35.4% of that number *less* the number of deaths of unvaccinated infants. Over a period of 60 years more than half the infants born who survived to the age of 4–6 months were vaccinated; even now the proportion is likely to be about a third.

Between 1851 and 1880 more than 130,000 persons died of smallpox in England and Wales; in the next 30 years a few more than 20,000, and then only 407: of these only 21 were in the decennium 1931–40. Very few practitioners under the age of 60 whose experience has been confined to England and Wales have seen an epidemic of "classical" smallpox. In 1901–2, our most recent "classical" epidemic, there were 2,820 deaths in England and Wales; of these more than half (1,642) were deaths of Londoners. That epidemic accounted for more than half the total mortality from smallpox in the decennium 1901–10.

These are some of the facts *not* disputed; their orthodox interpretation is contained in the following extract from a report issued by the Ministry of Health in 1921:

"We know that the mortality from smallpox is much less now than in pre-vaccination times, that the greatest diminution in the smallpox mortality is found in the early years of life, in which there is most vaccination; that in countries in which there is much vaccination and revaccination relatively to the population there is little smallpox; that in places where smallpox prevails it attacks a much greater proportion of the unvaccinated than the vaccinated, especially where the vaccinations are comparatively recent; that in houses invaded by smallpox in the course of an outbreak not nearly so many of the vaccinated inmates are attacked as of the unvaccinated in proportion to their numbers; that the fatality among persons attacked by smallpox is much greater age for age among the unvaccinated than among the vaccinated; that the degree of protection conferred by vaccination corresponds to the thoroughness with which the operation has been performed, four marks affording much better protection than one or two; that the protection afforded by vaccination wanes with lapse of time; that improved sanitation, however beneficial in itself, cannot account for these facts; and that though early diagnosis, prompt isolation of smallpox patients in suitable hospitals, effective disinfection, supervision of contacts, and other such public health measures are invaluable they are no substitute for vaccination."

I think the first sentence of this passage might be improved by substituting for "pre-vaccination times" "seventeenth to nineteenth centuries"; otherwise, so far as it relates to matters of fact, it is in my opinion accurate and, so far as it consists of inferences from facts, reasonable; provided, of course, that one is satisfied that, biologically speaking, vaccination is a rational procedure. The vast majority of our profession are so satisfied, and I am a unit of that great majority. Sixty or seventy years ago this opinion would have been expressed by a large majority with even greater confidence but with less justification than can now be claimed, because from the biological point of view the final confirmation has been obtained within the last 50 years.

A young man who turns over the earlier controversial literature of the subject can hardly fail to be, I will not say shocked, but surprised that men of first-rate ability should draw such wildly different conclusions from evidence available to them equally. We shall find Simon putting Jenner on an equality with Newton, and Creighton describing him as a shuffling rogue who first attracted attention by telling lies about the habits of the cuckoo (the "tissue of inconsistencies and absurdities" Jenner described have been photographed from nature in our time). Yet Simon had himself done scientific research and Creighton was the best descriptive epidemiologist of the nineteenth century.

The explanation is, I think, this. When Simon wrote, thirty years before Creighton, the statistical evidence in favour of vaccination was certainly not impeccable but it was substantial, and Simon believed that many lives would be saved if vaccination were widely used. He wished to strengthen public faith in vaccination; he was a propagandist, and, as we have excellent reason to know, it is hard to combine scientific accuracy with propaganda. Simon knew that the case for vaccination was empirical, as was the case for using Jesuit's bark in ague in the seventeenth century, but he was an opportunist in the good sense of the word, a pioneer of social medicine. Creighton was a scholar and logician; he simply could not stomach the absurdity, as he thought it, of preventing one disease by inoculating a different disease. Just as providence permitted bird watchers to photograph what Creighton attributed to Jenner's imagination, S. M. Copeman was permitted in 1902 to derive vaccinia from variola by passage of variola virus through the monkey, and M. Gordon (1925) and Burgess, Craigie, and Tulloch (1929) established a biochemical affinity between the two viruses.

It is, I think, impossible now to doubt that Jenner's guess—or happy intuition—that cowpox and smallpox were closely akin was right. Jenner's story retains its human interest, perhaps even a scientific interest, as a further illustration of the fact that a student of natural history with enthusiasm and imagination may reach truth hidden from book-learned men, but his virtues or vices are quite irrelevant to a judgment on vaccination to be pronounced now.

I do not think that the waning resort to vaccination is a consequence of the propaganda of the anti-vaccinists, but due primarily to two facts. The first is that very few persons under 60 who have never left England have any experience of deadly smallpox; the second that it has been proved that vaccination may have mortal consequences. The whole number of deaths from post-vaccinal encephalitis has been very small—utterly negligible—statistically speaking, in comparison with the "normal" deaths from smallpox a generation ago, but they *are* facts. As Farr said when making one of those calculations of the pecuniary value of a human life which some economists enjoy making, "This valuation of life differs from that of the mother to whom her helpless child is inestimably precious." Nothing short of an epidemic at least as serious as that of 1901–2 would bring up the national percentage of infant vaccinations to what it was two generations ago. Governments, however, grow more authoritarian daily; we are compelled to do or abstain from doing things in a way which would have shocked our grandparents. If our profession could make it probable that neglect of vaccination would be followed by an epidemic of classical smallpox within a politically important interval—say, within the lifetime of a sitting Parliament—we *might* bring back compulsory vaccination and introduce compulsory revaccination. I do not think we can make it probable. Experience at home (in Leicester) and in the Dominions suggests that the introduction of classical smallpox into a community poorly protected does not automatically produce a devastating epidemic, provided there are adequate facilities for the immediate vaccination of those willing to be vaccinated.

Dr. Killick Millard's experience in Leicester will be well known to readers; Australian experience is perhaps less familiar. The great cities of Sydney and Melbourne contrasted in vaccinal states. In the ten years before the most serious outbreak of smallpox in Sydney recorded vaccinations were only 30.1% of registered births in New South Wales; the corresponding figure for Victoria was 81.2%. In 1881–2 Sydney had a considerable prevalence—154 cases of smallpox widely disseminated; in 1884–5 Melbourne had 56 cases. The fatality in the Sydney experience was 25.9%, which is a "normal" fatality for classical smallpox; of the 56 patients in Melbourne only 4 died. Clearly Melbourne came off better than Sydney, a fact I should attribute to better use made of infant vaccination. But it is equally clear that the experience of Sydney was not devastating, that the disease did not spread like wildfire.

I note that in 1881 more than 61,000 persons were vaccinated in New South Wales. The presence within a community of smallpox is very good propaganda for vaccination.

If, of course, the supply of vaccine became restricted or facilities for its distribution to medical practitioners were curtailed, then I think we might fairly say that sooner or later an epidemic *was* probable. The fact that very few cases of classical or, as some say, African smallpox have come to notice in this country for many years may mean, perhaps *must* mean, that the virus has changed its type and fulfilled Sydenham's saying that epidemic diseases like empires rise, decline, and fall, giving place to others. But the history of scarlet fever warns us to be cautious in prophecy. We had better not boast that deadly smallpox is as extinct as bubonic plague in England.

THE ROLE OF THE PART-TIME CONSULTANT

BY

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This paper seeks to set out the present position of part-time consultants and to discuss the advantages and disadvantages of their present position, with a view to deciding what part, if any, they should play in the medical service of the future.

Some definition of a "consultant" (this word being used in this discussion as synonymous with the term "specialist") is required. Three requisites of consultant status are apparent: (1) specialist experience in the department concerned; (2) postgraduate qualification of recognized standard in the specialty concerned; (3) recognition by other practitioners as being a specialist: a hospital appointment in his branch of medicine will usually be implied. All three criteria should ordinarily be fulfilled, though in certain cases the possession of a postgraduate specialist qualification might be waived. Satisfaction of all three criteria is not inconsistent with the work of a general practitioner.

Outside the largest centres the widespread development of specialization, carried out by full-time consultants, is of very recent development. Even in some large cities it is still found that some hospital consultants practise also as G.P.s; fifteen years ago the custom was more widespread. A large number of medical men with specialist experience and qualifications are at present employed in general practice, the great majority holding hospital appointments and carrying out a consultant or specialist function in the neighbourhood. The bulk of the work they do is very considerable. Their specialist experience is invaluable, and any satisfactory medical service must utilize them fully. This can be done (*a*) by maintaining their status as part-time consultants, with an assured "place in the sun," or (*b*) by employing them only as full-time specialists, the use of part-time consultants being stopped. The pros and cons of each alternative are discussed below.

Reasons for Entering General Practice

Why do young specialists (or young men with unusual postgraduate experience) enter general practice? Some of the reasons, which are many, can be set out as follows: (1) Financial. The doctor, aged 26-30, wishes to marry, and requires a larger income than he can obtain while waiting for a highly paid full-time post or for the development of a remunerative consulting practice. (2) Personal. Not every doctor anxious to do specializing in medicine wishes to devote his life to a city centre, nor does his position as a family man always allow him to do so. (3) The area in which he wishes to practise, or the hospital to which he is appointed, may not be large enough to support a full-time consultant. The specialist experience may be adequate, but the financial returns will not support him unless he undertakes other medical work. This applies particularly to anaesthetists, but to a lesser degree also to physicians and surgeons.

Scope of the Work of a Part-time Consultant

This varies considerably in different centres throughout the country. In surgical practice, in the smaller centres, adequately experienced emergency surgeons may confine themselves to acute abdominal emergencies and a restricted list of routine (set) operations. At the other end of the scale, in the largest centres, part-time consulting surgeons undertake all set operations, with the exception of such special departments as cranial and thoracic surgery. These surgeons devote a diminishing portion of their time to general practice, and many of them as they reach seniority in their hospitals ultimately relinquish general practice for full-time consulting work. But, however much or however little surgery any part-time surgeon may undertake, it will be readily agreed that the total volume of work undertaken by a specialist of this type is very considerable, and also that the qualities he requires for successful practice (i.e., professional excellence, based on training and experience, and a high standard of professional honour limiting him to those procedures within his ability to perform) are precisely those necessary for his full-time colleague.

As the volume of work carried out by part-time consultants is too great for it to be done elsewhere than at present arranged, the next highest medical centres being already worked to capacity, only two alternative futures can be envisaged for them: (1) that they continue to function in their present appointments; or (2) that they enter full-time hospital or consultant practice, replacing hospital consultants of part-time basis.

Supply of Further Full-time Consultants

There is an acknowledged shortage of specialists in all departments of medicine, though this shortage is often masked by bad distribution and shortage of hospital accommodation. Junior consultants waiting for vacancies on the staffs of teaching and non-teaching hospitals throng the large centres. Few hospitals can afford to maintain adequate medical staffs owing to deficient bed and out-patient accommodation. If they expanded sufficiently to deal with their long waiting lists an increase in staff appointments by as much as 30% might be required. The real shortage would then at once become apparent. The medical schools cannot be expected to correct this shortage for at least ten years, and it would seem that the main source of further full-time consultants would be the ranks of their part-time colleagues. If the consultant service is to be widened, as it must be, then either greater use must be made of the part-time consultant or, if part-time specialization is to be discouraged, present-day specialists in part-time practice must be induced to enter the consultant service in a full-time capacity.

Seen from the point of view of patients in rural areas centred on smaller hospitals, three alternative forms of

hospital consultant service are possible: (1) a part-time system, the consultants undertaking general medical work; (2) hospitals with medical staffs headed by full-time salaried specialists; (3) a visiting staff of whole-time junior consultants from larger hospital centres. It is doubtful if the last innovation would give better service than that at present rendered by part-time consultant staffs. Probably full-time salaried posts at smaller hospitals would carry lower salaries and would be regarded by younger consultants as stepping-stones to more important and higher-paid appointments. Such (comparatively) temporary appointments of less-experienced men would be unlikely to be acceptable to the local population, and the service would probably be less satisfactory than that already given by part-time consultants. The probable disadvantages of such a change-over may be listed as follows:

I. Effects on General Medical Standards

(*a*) With the withdrawal from general practice of part-time consultants a general lowering of the standards among G.P.s consequent upon the loss of the stimulating influence of the more highly qualified men can be expected. Subsequent entrants into general practice will be of a lower average quality, as the entry of men with higher qualifications will practically cease.

(*b*) *Uneconomic Use of Hospitals.*—With lowering of the standards of general practice fewer cases will be investigated outside out-patient departments. Increasing reference to hospital will lead to overcrowding of out-patient accommodation and longer waiting-lists for admission. Hospitals will thus tend to be used uneconomically.

(*c*) *Effect on Full-time Consultants.*—As the full effect of the consultant's opinion depends, in fine, on the way his recommendations are carried out, any lowering of the standards of general practice will have an adverse effect on his work. Most consultants will agree that a high level of general practice is very stimulating to the keenness of the consultant and greatly aids him in his work.

II. Effect on Patients

When the doctor–patient relationship is satisfactory at the general practice level the bulk of patients prefer to undergo hospital treatment under their own doctor (or at least under his supervision) or by a consultant of their doctor's choice, especially if the consultant is already known to them. The impersonal atmosphere of a hospital where their own doctor is excluded from practice, and where his place is not taken by a well-known substitute (the old-type private consultant), is a great barrier to persuading patients to accept hospital treatment, especially of surgical type. Introduction of the paid hospital surgeon may easily lead to a failure of the doctor–patient relationship at the hospital level, with disastrous results. Only practitioners who have fought against old-standing prejudices arising from failure of this relationship in days long past realize how strong and malignant in their effects such prejudices can be. One unsatisfactory surgeon in sole charge of a surgical side of a hospital for as long as six months will prejudice the hospital for several years.

The part played by the part-time consultant, especially if he is the patient's own doctor, is of inestimable value here; if he does not perform the operation he may supervise post-operative care. His presence helps to dispel the fear of the unknown and the terrors of an unfamiliar atmosphere, and completely banishes the unreasonable fear of "experimentation" that some patients hold. From the patient's point of view the principle of continuity of treatment is of the utmost value. Where the present system of part-time consultants is working efficiently (especially where they are engaged in group practice around a small hospital) it is possible for a patient to be diagnosed in his own home, fully investigated and treated in hospital, and his after-care and convalescence all supervised by his own medical group, working as a team. The advantages of this contrast markedly with the situation where his hospital care is undertaken by hospital consultants with no extra-hospital interests, whose concern with patients ends the moment they leave the hospital walls.

III. Effects on Doctors Themselves

All good doctors, whatever their form of practice, feel a very real sense of responsibility for their patients. This, however, varies enormously in different varieties of medical work. In hospital practice it is probably felt most acutely by the part-time consultant in general practice who lives in close touch with his patients, whose lives are intimately his concern. The whole-time consultant who operates feels that the life of a man is in his hands; the G.P. consultant realizes, as well as this, his responsibility for the well-being of that man's whole family. His sense of responsibility is therefore so much the stronger. The full-time salaried hospital surgeon, from his diminished contact with the patient's surroundings, cannot feel the same sense of responsibility.

This sense of responsibility is necessary not only to humanize the doctor's work but to maintain his standards of efficiency. A consultant paid an adequate salary for full-time work will not be stimulated to the utmost effort in the same way as a consultant doing private practice, whose reputation and income depend in large part on his abilities and his willingness to oblige and satisfy the doctors who send him cases.

The adverse effects of stripping general practice of its part-time consultants will not be felt fully until the present generation have retired from medical practice, to be replaced by full-time surgeons and physicians who have had no experience of general practice.

Criticisms of Part-time Consultants

Consultants, whether fully or only partly employed in consultant work, are liable to criticism in the same way as any other practitioner. Part-timers are, however, liable to a special form of criticism from full-time specialists, who look with suspicion on part-time colleagues, who, they feel, may lower consultant status if they are allowed to "creep or intrude or climb into the fold." These criticisms may at times be tainted with professional jealousy, but are nevertheless worth examining. They fall into four main groups.

1. *Unevenness of Standard and Unsoundness of Credentials.*—If the prerequisites of consultant status, set out earlier in this paper, are fulfilled, this criticism will be partly met. Unevenness of professional standard is not a monopoly of the part-time consultant, but is shared by all practitioners, general or specialist. The part-time consultant has, however, in addition to a high standard of professional honour which he should share with all members of the profession (and which should prevent him from undertaking work for which he is not the best man available) the additional constraint of having to live at close quarters with his cases—his successes and the results of his failures alike. All good G.P.s, and probably most G.P. consultants, will agree that this is the greatest and most effective check on any specialist embarking on an undertaking which is too high for him. The full-time consultant and the hospital surgeon, who often know little of their patients and sometimes nothing of the practitioner who referred the case, are not subject to this restraint.

2. *The G.P. Consultant (especially the Surgeon) tackles more than he should, and Consequently makes Serious Mistakes.*—This may be so in certain cases, but the criticism can be levelled equally well at full-time consultants and hospital surgeons, who equally may attempt procedures which are beyond their scope and which should be left to more highly specialized technicians. Once again the part-timer has his two restraining influences: professional honour—not allowing him to undertake more than he can manage—and having to live in close touch with his patient afterwards. The careful selection of part-time consultants who fulfil the prerequisites will go some way towards meeting this criticism, while a closer relation between part-time and full-time consultants (referred to in greater detail below) will add to its abolition.

3. *The Part-time Consultant is swayed by personal Gain (i.e., he Operates for Fees).*—This criticism has been levelled

at all medical practitioners since earliest times, the section of the profession most often so criticized being the full-time consultant. It is of course quite untrue of the full-time consultant, and at least as much can be said of his part-time colleague. The part-timer has, in fact, to be more careful of his reputation for professional skill than his full-time colleague, in view of the vigorous competition which the latter makes. In his own area the part-time consultant has to be doubly careful of his reputation, because if everything does not go well patients are more ready to attach blame to the local man than to the specialist who comes from a distance. This fact is an added inducement to the part-time consultant not to attempt anything beyond his scope.

4. *The Part-time Consultant is Overburdened with Other Work and has Little Time for Reading and Keeping Abreast in his Specialty.*—Unfortunately this is largely true at the present time. His contributions to the specialist service can be so great, however, that steps should be taken to remedy this, possibly by stipulating that his consulting type of work should occupy a fixed minimum number of hours a week, his general work being limited accordingly. In a State medical service the latter could be ensured by limiting the list of State patients of a part-time consultant to a level well below the maximum permitted to a G.P. In certain cases the attachment of part-time consultants to staffs of smaller hospitals as out-patient or in-patient clinical assistants at hospitals on the next highest level will effect the necessary liaison and maintain a level of medical treatment.

The Part-time Consultant and the G.P. Surgeon

None of the remarks above refer to the G.P. surgeon without pretence to being a consultant or specialist who after a moderate surgical experience at his teaching hospital continued operating, mainly on acute abdominal emergencies, throughout his professional career. Valuable as much of the work was, the standard was very uncertain, and it is doubtful if there is a place for surgery of this nature in a State medical service. The occasional surgeon, like the occasional anaesthetist, can be a menace, and it is in the public interest that work of such a responsible nature should be undertaken only by men who have the necessary credentials and experience. It is for this reason that such stress has been laid on the prerequisites for classification of a specialist, however much or however little of his time may be devoted to major consulting work.

Increasing Complexity of Medical Administration

The British Isles, a land with a small surface area, has nevertheless a great variety of local conditions so far as medical administration is concerned. No scheme which fails to take this local variation into account is likely to be completely successful. The most satisfactory scheme will be the one that is fluid enough to allow the preservation of arrangements which have been found well suited to the locality. Thus side by side in any one region we shall be able to find: (1) A full-time salaried medical service (in the Scottish Highlands and Islands Scheme); (2) G.P.s working in health centres; (3) part-time consultants working in group practice around smaller hospitals; (4) individual practitioners working towards the city centre, with its large teaching and non-teaching hospitals. It is possible that in many areas the present medical arrangements are not satisfactory and that certain places served by part-time specialists would do better with full-time consultants, while other scattered areas, poorly served by larger hospitals, would do better with part-time consultants working in group practice rather than calling, as at present, on specialists living 40 miles away. The point to be stressed is fluidity in administration, instead of setting up of hard-and-fast arrangements for universal application irrespective of local needs.

Summary and Recommendations

This paper is the outcome of the experience of a group of five part-time consultants working together in group medical practice, as set out in a former paper. Reference to this previous paper may amplify some of the points discussed herein. The points to be stressed are:

1. The strict fulfilment of prerequisites of consultant status, and the consideration of the part-timer as a consultant who does part-time work rather than as a G.P. who dabbles in the field of the specialist.

2. The encouragement of liaison between part-time consultants and hospitals on the next level. Facilities should be given for their appointment to junior posts of the clinical assistant type (to out-patient or in-patient departments).

3. The realization that if a part-time consultant is to do his best work he must be given every opportunity of keeping in touch with most recent work.

4. The recognition of the principle of fluid administration to meet varying local needs.

5. The fostering of the principle of group medical practice in areas for which it is suitable. Men of high professional attainments with postgraduate qualifications and experience who are willing to undertake general practice should be encouraged to enter these groups and to practise as consultants on the local hospital staffs, working in co-operation with the next largest hospital, as recommended above.

6. It is important that the full-time consultant should have opportunities for private consulting practice. He would thus retain a more personal link with his patients' surroundings than is normally possible from an interview in the out-patient department. This would help to ensure the maintenance of a satisfactory doctor–patient relationship at the hospital level.

7. Finally, the dangers of the full-time hospital surgeon, out of touch with conditions of general medical practice outside hospitals, are stressed.

Medical Memoranda

Rupture of Corpus Luteum of Pregnancy during Coitus causing Acute Abdomen followed by Abortion

The following case report is interesting enough to merit publication.

CASE REPORT

The patient, a nurse aged 33, married 3 years, had had one child, a male 9 lb. (4.08 kg.) at birth, who was delivered by lower uterine segment caesarean section on March 20, 1946, and is alive and well. The menarche occurred at 14. The menstrual cycle was 4 to 5 days every 28 to 35 days, and the last menstrual period was June 10, 1947.

She was first seen at 11 a.m. on July 20, 1947. At 3 a.m., during marital intercourse, she had been seized with sudden severe lower abdominal pain. She felt sick but did not vomit. She was promptly seen by her doctor, who administered 1/6 gr. (11 mg.) of heroin hypodermically without relief. A further 1/12 gr. (5.4 mg.) was given at about 5 a.m. Her menstrual period was 7 to 12 days overdue, but as that was not unusual it had excited no comment. She did not think she was pregnant, as she had had no subjective sensations to suggest that. On being pressed as to any earlier discomfort she admitted occasional vague uneasiness in the region of the left groin during the previous week or so.

On examination the patient was observed to be of light build and short stature. She was pale and restless and complained of cramp-like pains in the abdomen. The pulse rate was 80; the blood pressure was not recorded. The temperature was 96° F. (35.6° C.). The abdomen moved slightly with respiration but was diffusely and acutely tender over the lower segment. This appeared to be rather worse on the right side. There was no definite area of hyperaesthesia or any evidence of psoas irritation. Vaginal examination was difficult owing to severe generalized vault tenderness. Movement of the cervix, which was not noticeably soft, caused severe excitation pain. No palpable swelling was detected.

Twisted ovarian cyst was first considered, but vaginal examination, although inconclusive, seemed to exclude this and pointed either to an ectopic pregnancy or to a ruptured Graafian follicle. The latter was deemed the more probable diagnosis as there had been no vaginal bleeding, and the patient, an experienced nurse, could not

believe she was pregnant. Reckoning, somewhat academically be it admitted in view of this particular patient's irregular menstruation, on a 28-day cycle and a missed period, the date of onset coincided with the probable time of ovulation in the new cycle.

Examination under anaesthesia was carried out. Nothing definite could be felt, but an impression was received of a vague soft swelling in the left fornix. Needling of the posterior fornix was contemplated but not undertaken, as the finding of blood in such a case would not have further clarified the diagnosis.

The abdomen was opened under curarine and cyclopropane anaesthesia. A moderate amount of free blood was found in the pelvis. The uterus appeared normal in size and consistency. The left ovary was found to have a ruptured follicle which appeared to have been about the size of a marble. A half-handful of blood clot was adherent to this. Immediately adjacent was a dark swelling occupying approximately the base of what had been the follicle. A light prick of the scalpel showed the yellow convolutions of a recent corpus luteum. It seemed impossible to say whether one was dealing with one or two structures—a cystic corpus luteum of pregnancy or a ruptured Graafian follicle adjacent to a recent corpus luteum. The other ovary was normal in appearance. Apart from removing the blood clot and making sure that bleeding had ceased, nothing was done and the abdomen was closed.

Next morning a specimen of urine was taken for an Aschheim-Zondek test. On the third day the patient announced that she was menstruating. She had a painless loss, which ceased after four days. The Aschheim-Zondek test was reported weakly positive. Such a result can be obtained immediately before the onset of menstruation. In view of the events outlined it was thus interpreted at first. Two days later bleeding per vaginam was resumed and was followed by slight brownish discharge which continued. Finally on Aug. 8 curettage was undertaken and fragments of an early ovum were found in process of extrusion. Histological examination confirmed the presence of chorionic villi. Recovery thereafter was uneventful.

The events subsequent to laparotomy make it clear that the emergency had been due to rupture of the corpus luteum of pregnancy. Whether or not this had been cystic it is impossible to say, as the normal size is known to have wide variations. It seems likely, though not necessarily conclusive, that the abortion was attributable to the impairment of the integrity of the corpus luteum from traumatic rupture.

W. R. SLOAN, M.D., F.R.C.S.Ed., M.R.C.O.G.

Unusual Case of Meningococcal Septicaemia

Meningococcal septicaemia is usually considered to be either an acute fulminating condition associated with the Waterhouse-Friderichsen syndrome or as a more chronic form characterized by intermittent fever, a rash which is frequently purpuric, and arthritis. The following case corresponds with neither of the accepted varieties and presented some other unusual features.

CASE RECORD

A boy aged 9 was admitted to hospital on Dec. 28, 1946, with a history of having developed a feverish cold and a rash on the hands and trunk on Dec. 21. Medical advice was not sought till the day of admission, when the patient developed severe pain in the chest and abdomen.

On admission his general condition was poor: temperature 101.6° F. (38.7° C.); pulse 110; respirations 48. There was well-marked cyanosis and a generalized haemorrhagic rash varying from areas two inches (5 cm.) in diameter to pin-point petechiae. He had a well-marked pericardial effusion with dullness three inches (7.5 cm.) outside the nipple line. The liver was enlarged four fingers' breadth below the costal margin, evidently resulting from heart failure. Moist sounds were generalized throughout the chest, but in addition there was evidence of consolidation of the left lower lobe.

There was no spinal retraction, headache, neck rigidity, or impairment of consciousness, but Kernig's sign was positive and there was a bilateral extensor plantar response. Turbid fluid was obtained both on lumbar puncture and on aspiration of the pericardium. The turbidity of these fluids was mainly due to polymorphs—3,500 per c.mm. in the case of the cerebrospinal fluid. Glucose broth cultures of the blood and C.S.F. gave negative results, but meningococci were grown from the pericardial effusion.

Treatment was instituted as follows. *Sulphonamides:* soluble sulphathiazole 1 g. intravenously followed by sulphadiazine by mouth 1 g. four-hourly. *Penicillin:* 25,000 units in 5 ml. saline intrathecally after the removal of 20 ml. C.S.F. followed by injections of 100,000 units intramuscularly, giving the first two doses at three-hourly and subsequent doses at six-hourly intervals. Oxygen was given continuously and 20 ml. of fluid was aspirated from the pericardium.

Marked improvement followed except for a temporary extension of the consolidation of the left lung. By Dec. 30 the liver edge was only one finger's breadth below the costal margin and the cardiac dullness was one inch (2.5 cm.) outside the nipple line. A loud pleural rub was present over the consolidated lung tissue. By Jan. 1 the pericardial effusion was seen to have rapidly re-formed; 70 ml. was aspirated and 50,000 units of penicillin injected into the pericardium. The aspirated fluid was now sterile. The signs of effusion were replaced by a loud pericardial rub. Intramuscular penicillin was discontinued on Jan. 5 after it had been reported that meningococci had been isolated. Sulphadiazine was reduced to 0.5 g. four-hourly on Jan. 1 and discontinued on Jan. 5. From Jan. 2 the patient had been completely afebrile and on the following day further improvement permitted the discontinuance of oxygen. By this time the rash had also faded.

Except for persisting consolidation of the left base improvement was maintained till Jan. 7, when the temperature rose to 99° F. (37.2° C.) and the pericardial effusion again re-formed; 50 ml. of blood-stained fluid was aspirated and again proved to be sterile. The effusion did not re-form again and the patient was afebrile from Jan. 9 onwards. Nevertheless from Jan. 7 congestive heart failure became progressively more acute, as evidenced by increasing enlargement of the liver-dyspnoea, and the development of ascites. Treatment with oxygen, digitalis, and subsequently with calcium failed to arrest the condition and the patient died on Jan. 16.

Necropsy on the same day showed the following:

Heart.—The fluid had absorbed and the pericardium was widely adherent. The condition was one of healing fibropurulent pericarditis. The myocardium showed cloudy swelling with vacuolation of some cells suggesting fatty degeneration. The heart valves were apparently healthy.

Lungs.—Septic infarcts with evidence of early organization. Areas of collapse, engorgement, and bronchiectasis.

Spleen.—Firm consistency; congested but otherwise healthy.

Kidneys.—Cloudy swelling of the tubular epithelium.

Liver.—Congestion atrophy and fatty degeneration of the nutmeg pattern.

Adrenals.—Congestion of the zona reticularis; otherwise healthy.

Meninges.—Subpial fibroblastic reaction in the region of the optic chiasma indicating previous inflammations; otherwise normal.

COMMENT

The unexpected features of this case were: (1) localization of the meningeal reaction resulting in turbid C.S.F. without clinical meningitis; and (2) death from carditis rather than from adrenal apoplexy—more commonly associated with meningococcal septicaemia—occurring after the infection had been eliminated.

I have not been able to find any reported case of a similar localized meningitis. In an article on meningococcal infection in the *Annals of Internal Medicine* (April, 1946) Goldbloom, Nickman, and Leidman noted a few cases in which there were C.S.F. changes without clinical meningitis, but these changes were considered as precursors of a general meningitis rather than as a localized meningeal infection.

Pericarditis is usually listed as one of the rarer complications of meningococcal infection. Hartwell (1939) reported a fatal case of meningococcal myocarditis and was able to discover twelve other cases in the literature. Saphir (1936) stated that meningococcal myocarditis was common in those who succumbed to the infection, and commented on the possible confusion with the Waterhouse-Friderichsen syndrome. More recently Holman and Angevine (1946) reported two cases in detail. One patient had a fatal heart attack on the 33rd day of illness after having been allowed to get up; severe myocardial degeneration was confirmed at necropsy. In the other case the diagnosis was based on clinical and electrocardiographic evidence. They note that toxaemia and severe systemic infection are features of recorded cases and consider meningococcal infection a notable omission from the listed causes of myocarditis. In my own patient it would appear that the embarrassment of a recently and extensively adherent pericardium added to the effect of myocardial degeneration to produce fatal heart failure.

I wish to thank Dr. W. H. Hughes and Dr. W. D. Linsell, who performed the post-mortem examination, and Dr. D. M. Pryce, who carried out the histological examinations. I am grateful to Dr. R. Leader, M.O.H. Ealing Borough, for permission to publish this case.

J. J. LINEHAN, M.D., D.P.H., D.C.H.

REFERENCES

Hartwell, R. M. (1939). *Amer. J. Dis. Child.*, **58**, 823.
Holman, D. V., and Angevine, D. M. (1946). *Amer. J. med. Sci.*, **211**, 129.
Saphir, O. (1936). *Amer. J. Path.*, **12**, 677.

Reviews

PARASITES OF MAN

Manual of Medical Parasitology. With Techniques for Laboratory Diagnosis and Notes on Related Animal Parasites. By C. Courson Zeliff, M.S., Ph.D. (Pp. 159; illustrated. $3.75.) Pennsylvania: State College, Keeler's College Stores. 1947.

Dr. Zeliff is Assistant Professor of Human Parasitology and Zoology in the Pennsylvania State College, and is well qualified to write a textbook on "exercises and techniques" for medical students and "those interested largely in the health and well-being of the human race rather than that of wild or domesticated animals." For this task Dr. Zeliff has had the benefit of advice and suggestions from many distinguished American parasitologists, and has received permission to reproduce in his book many excellent plates and figures borrowed from standard works on this subject. Unfortunately some of the plates have suffered in clearness owing to their being considerably reduced. The result of Dr. Zeliff's work is a book of some 150 pages, into which he has condensed with great skill and, on the whole, considerable accuracy a summary of medical parasitology. The reviewer has read it with much interest and some profit.

To say that the field he covers is wide is an understatement, for it includes descriptions and comments on many creatures which cannot be regarded as normally parasitic in the human host. To quote one instance: in his account of the class *Trematoda* the author refers to no fewer than 22 species of flukes as parasitizing man, whereas most recent standard works, such as those written by Belding and by Craig and Faust, although more than four times the size of the present volume, only take cognizance of a smaller number of species. This is only one instance taken almost at random from among the helminths; a like determination not to omit records of human infestation is to be found in the sections on the *Protozoa* and the *Arthropoda*.

In the last part of the book, consisting of some 40 pages, he considers the various laboratory techniques which may be used for the preservation and examination of material submitted for diagnosis. This section is particularly useful, and it is obvious that Dr. Zeliff has had long practical experience of the methods he recommends. Even here, however, condensation sometimes obscures the author's otherwise clear exposition and may be dangerous, as, for instance, when referring to the diagnosis of hydatid infestation, he states in the footnote on p. 56: "Diagnosis is made by the Intradermal test (Casoni test) complement fixation (old complicated cases), precipitin test, puncture (anaphylaxis possible), *x*-ray (bone type), eosinophilia and hydatid thrill, in order of decreasing accuracy. See the section on technique and diagnosis for details." No further reference is made in the section on technique to the diagnosis of hydatid disease by liver puncture, and the student might be left with the impression that the only danger accompanying the escape of hydatid fluid was the possibility of anaphylaxis. The reviewer considers that this persistent condensation is excessive, and that a better result would have been obtained by omitting for consideration creatures of little medical importance and using the space so gained to amplify the accounts of the remaining species. This is a matter of opinion, however, and Dr. Zeliff's book provides a useful and generally up-to-date summary of the names, main characteristics, and methods of recognizing and preserving the invertebrate parasites which at some stage in their life-cycle inhabit the human host.

R. M. GORDON.

KIDNEY DISEASE

Nierenkrankheiten. In two volumes. Volume 1 by Prof. E. Becher. Volume 2, by Prof. E. Becher, edited by Prof. Franz Volhard. (Pp. 1,046. No price given.) Jena: Verlag von Gustav Fischer.

The first of these two volumes appeared in 1944 and the second in 1947. Erwin Becher died in 1944, so Volhard edited the second volume. Becher himself wrote a large part of both books, although there are chapters by various authors. It is interesting to read German literature on kidney disease again after many years. Its general character has not changed. German authors still retain to an amazing degree the faculty of expressing in thirty ponderous pages what could be better said in three. Indeed this is something of an understatement, for the article on oedema covers 62 pages. We wonder how often reviewers faithfully read every word of the books they scan and how often they admit to not doing so. We must confess that after about 39 pages on oedema which seemed to be leading nowhere we turned to the next chapter.

Again, there is little change in classification. It still seems to be the fashion to describe as many separate varieties of disease as possible, and if clinical cases do not fit into these categories they can always be called "*Kombinationsform*" or "*Ubergangsform*," which conveniently puts them between one type and another but tends to leave the scheme somewhat untidy. One longs for Ellis's Croonian lectures and a breath of fresh air. Throughout the work one feels the authoritarian influence in German medicine. What Volhard has said is said for all time, and the more recent studies are judged by whether or not they are compatible with his pronouncements. We feel we should stand to attention whenever the great name is mentioned.

In short there is not much to be learnt from these volumes for all their thousand pages, and in particular that must be said of the physiological sections, in which the clearance concept of Van Slyke and the methods of Homer Smith are unknown. Rehberg's creatinin method of estimating glomerular filtration rate is briefly discussed, and inulin as an alternative is just mentioned, but no account of diodrast clearances and filtration fractions is to be found. The discussion on hypertension is better, though we are surprised to learn that "red" hypertension does not depend upon arteriolar constriction but on loss of elasticity (at least until it enters the "*Ubergangsform*"). Enger, who writes one of the chapters on hypertension, claims to have isolated a substance called "nephrin" from the kidney which differs from renin in many respects. He states that it can be found in the blood in hypertensive animals (with renal ischaemia) and in human cases of chronic nephritis and malignant sclerosis.

Other points of interest are Randerath's assertion that in nephrosis and similar conditions the glomerular damage is primary and the so-called hyaline droplet degeneration of the tubules is due to the presence of lipoid and albumin in the glomerular filtrate; and Becher's suggestion that the anaemia of uraemia is due to the presence of phenols, indican, etc., in the blood. Since these substances can always be found in the blood in uraemia it is easy to suspect but difficult to prove their causative connexion with the anaemia which also invariably accompanies chronic uraemia. The book is clearly printed, attractively (though cheaply) bound, but poorly indexed. Works referred to in the text are often omitted from the bibliographies.

ROBERT PLATT.

EMULSIONS

Practical Emulsions. By H. Bennett. Second edition. (Pp. 568. 48s.) New York: Chemical Publishing Co., Inc. London: Chapman and Hall. 1947.

As the title of this book suggests, it is more on the art of making and applying emulsions than on the theory of colloid chemistry. Although written for the technical worker, medical men will find certain sections of the book quite interesting. Part I, written by the author himself, contains general information on different types of emulsions, their characteristics, efficacy, and method of production. The last is more an art than a science. He discusses the properties of cholesterol, lecithin, and the triglycerides, soaps, and sulphonated emulsifiers, and gives an exhaustive list of emulsifying agents.

Part II is a symposium on the manufacture and uses of various emulsions. A new class of germicidal agents is mentioned, known as invert soaps or cationic surface-active agents. They are readily soluble in water, are non-irritant, and in low concentration interfere with the absorption of specific nutritional cationic substances necessary to bacteria. As detergents they are able to remove bacilli by physical means. They can be used in combination with other germicides and assist by reducing surface tension, increasing penetration, and wetting the bacterial surfaces. Serum, or the acridine dyes, which are cationic, do not inactivate these surface-acting agents, in contrast to soap or most of the other dyes which are anionic. Part III contains numerous formulae with details for preparing industrial, agricultural, domestic, and medical emulsions. The

account of the last mentioned is inadequate; in the four cases where an emulsion is named for a particular disease more effective remedies are generally available. There is also a formula for "Infants' Milk (Synthetic)." The book is well printed, has an excellent index, and is without typographical errors. At the end of each section a complete list of references is given. The book certainly provides much useful and practical information on emulsions.

JOHN T. INGRAM.

FRENCH GYNAECOLOGY

Gynécologie Médicale. By J. E. Marcel and Maurice Fabre and 17 collaborators. (Pp. 733; 563 figures. Paper covers 2,140 francs; stiff covers 2,540 francs.) Paris: Librairie Maloine.

This French textbook—and the arrangement and style are peculiarly French—of medical gynaecology is most informative. The French approach to gynaecology is quite different from our own, for they lay great stress on the symptomatology, diagnosis, and treatment of minor gynaecological complaints, and they are always intensely interested in the patient's mind. As a result a great deal of useful information can be found in this book; for example, the authors describe a pseudo-augmentation of a myoma physiologically and cyclically during the menstrual cycle.

The French methods of conservative treatment are much more elaborate than those used elsewhere, and it is true to say that many of them are quite unknown in Great Britain Many of the methods are not accepted over here mainly because we have had little experience of them. Acupuncture for vaginismus, ozone therapy to the vagina, and abdomino-pelvic massage would not be regarded favourably. The French methods, particularly physiotherapy, hydrotherapy, electrotherapy, and all the other therapies, are described in some detail. The illustrations are good.

WILFRED SHAW.

FOOD

Food and Health. By Henry C. Sherman. New edition, completely revised and reset. (Pp. 290. 20s.) London and New York: The Macmillan Company. 1947.

Popular books on diet are as common as books on psychology and sexology, and like these they tend to be cranky. Prof. Sherman, however, is an original worker of distinction in the field of nutrition, and his book, a recasting of one which was first produced in 1934, is a thoroughly satisfactory exposition of the subject in short compass and in a delightful prose style. Both laymen and doctors will read it with interest and profit, particularly, perhaps, those doctors who wish to instruct laymen. Prof. Sherman makes high claims for the value of improved diet in preventing disease and establishing better general health in the population as a whole. He treats of the body's energy requirements and the control of body weight. He then considers in more detail the specific roles of the proteins, mineral elements, especially calcium, and the vitamins. Finally he discusses the general composition of the diet and the adjustments for better nutrition, stressing the value of eating when possible the natural food in its entirety—e.g., the whole grain, eggs, or milk. With this proviso he believes that direct food crops such as grains, vegetables, and fruit may well be given a larger place in the dietary than was generally allotted them between the two wars. This may bring us comfort in our time, though one cannot help wondering whether dietetics, like history, is not rewritten to suit the needs of each generation.

L. J. WITTS.

After a useful review of the literature on the blood-brain and blood-spinal-fluid barrier, Dr. Sten Zetterholm, the author of *Blood-Spinal-fluid Permeability to Bromide in Closed Head Injuries* (Acta Psychiatrica et Neurologica Supplementum XLV; no price given), concludes that for examining the latter the administration of bromide provides a reliable method. The permeability quotient (P.Q.) for bromide passing from blood to spinal fluid is normally about 3. It is known to be lowered in meningitis and often in G.P.I. and tabes dorsalis. In this study the bromide P.Q. has been estimated in cases of head injury, both acute (unselected) and chronic cases complaining of post-concussional symptoms. In cases with clinical evidence of severe brain injury (fracture, long amnesia, etc.) there is a high proportion with an abnormal P.Q., and the author concludes that this method is a useful objective test in cases of head injury.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Philosophical Transactions of the Royal Society of London. Vol. 232. No. 588. "On Iron Flagellates." By E. G. Pringsheim. (6s.) No 589. "Experimental Investigations of the Shoot Apex of *Dryopteris aristata* Druce." By C. W. Wardlaw. (11s.) No. 590. "The Innervation and Actions of the Neurohypophysis: an Investigation Using the Method of Remote-control Stimulation." By G. W. Harris. (11s. 6d.) No. 591. "The Pallial Organs in the Aspidobranch Gastropoda and their Evolution throughout the Mollusca." By C. M. Yonge. (12s. 6d.) No. 592. "The Visual Perception of Fine Detail." By H. Hartridge. (24s.) Vol. 233. No. 593. "Study of a Non-marine Lamellibranch Succession in the *Anthraconaia lenisulcata* Zone of the Yorkshire Coal Measures." By R. M. C. Eagar. (11s.) No. 594. "The Theory of Linkage in Polysomic Inheritance." By R. A. Fisher. (5s. 6d.) No. 595. "On the Anatomy of the Pedunculate Barnacle *Lithotrya*." By H. Graham Cannon. (7s. 6d.) No. 596. "Studies of the Post-glacial History of British Vegetation." (7s. 6d.) London: Cambridge University Press. 1946-7.

Human Nutrition. By V. H. Mottram, M.A. (Pp. 267. 6s. 6d.) London: Arnold. 1948.

Intended principally for dietitians.

Manuel de Pathologie Exotique. By C. Mathis and R. Pons. (Pp. 642. No price.) Paris: Presses Universitaires. 1948.

The pathology, clinical features, and treatment of tropical diseases.

Hutchinson's Food and the Principles of Dietetics. Revised by V. H. Mottram, M.A., and G. Graham, M.D., F.R.C.P. 10th ed. (Pp. 727. 21s.) London: Arnold. 1948.

The authors have incorporated much new material in this textbook of dietetics.

La Pandémie Tuberculeuse avec une Etude sur La Tuberculose en Roumanie. By E. R. I. Neumann-Grigg. (Pp. 359. No price.) Paris: Baillière. 1948.

Two essays on the epidemiology of tuberculosis.

Demonstrations of Physical Signs in Clinical Surgery. Part 1. By Hamilton Bailey, F.R.C.S., F.A.C.S., F.I.C.S., F.R.S.Ed. 11th ed. (Pp. 100. 8s. 6d.) London: Marshall. 1948.

After introductory chapters on general principles and inflammation the author discusses the surgery of the face and head.

An Index of Modern Remedies. By William Mair, F.R.S.Ed., F.C.S., M.P.S. 4th ed. (Pp. 68. 3s.) Glasgow: "Scottish Chemist." 1948.

Lists the composition, pharmacological properties, and dosage of 1,500 remedies.

The Surgery of the Colon and Rectum. By Sir Hugh Devine, M.S., Hon. F.R.C.S., F.R.A.C.S., F.A.C.S., and John Devine, M.S., F.R.C.S., F.R.A.C.S., F.A.C.S. (Pp. 362. 52s. 6d.) London: Marshall. 1948.

A profusely illustrated textbook with operative details.

Cardiovascular Studies. By K. J. Franklin, D.M., F.R.C.P. (Pp. 306. 42s.) Oxford: Blackwell. 1948

A monograph on the Eustachian valve and related structures in man and animals.

Occupational and Physio-Therapy. By R. H. Finnegan. (Pp. 127. 6s.) London: Actinic Press. 1948.

A short account of these two ancillary professions for the student who thinks of entering one.

Ophthalmic Nursing. By M. H. Whiting, O.B.E., M.A., M.B., B.Ch., F.R.C.S. 5th ed. (Pp. 138. 7s. 6d.) London: Churchill. 1948.

A manual for nurses.

The Skeleton in Your Cupboard. The Scarlet Tree. By Winifred E. Fitzjohn. (Pp. 20. 1s.) London: Fitzroy. 1948.

Mnemonics on the skeleton and arterial system.

Handbook of Communicable Diseases. By the Medical Officers of Schools Association. 11th ed. (Pp. 71. 5s.) London: Churchill. 1948.

A summary of information for school medical officers.

BRITISH MEDICAL JOURNAL

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RETROSPECT AND PROSPECT

The appointed day for the National Health Service Act is two days after the publication of this issue of the *Journal*. July 5 is, indeed, a momentous date in the history of British Medicine. It will see the beginning of the most ambitious scheme yet launched in any country to provide complete medical care for everyone free of direct cost to the patient at the time of service. Approximately one-sixth of the cost of this vast scheme will come through the insurance contributions, the remaining five-sixths to be borne by the Exchequer. Even with voluntary contributions and the traditional willingness of the medical man to modify or waive his fees in case of need, there can be no doubt that many persons, especially among the middle classes, have in the past often hesitated to seek medical advice for fear of the cost that the discovery of a serious illness might entail. Nor can it be doubted that a grave illness necessitating a major operation or prolonged medical investigation and care in these days of elaborate professional techniques imposes a heavy financial strain at the moment when the family earner is least able to bear it. As Mr. Bevan says in the message we invited him to write for this issue of the *Journal*: "On July 5 there is no reason why the whole of the doctor–patient relationship should not be freed from what most of us feel should be irrelevant to it, the money factor, the collection of fees or thinking how to pay fees—an aspect of practice already distasteful to many practitioners." The cost of ill-health is a burden on the community and a burden on the family, and the startling advances made by Medicine in the past 25 years have steeply increased this cost. There is, therefore, a logical case for spreading it over the whole of the community so that those who are fortunate to remain in good health may help those who temporarily fall out of the ranks. The price Britain will have to pay for this new service is high, but the fact that the country is prepared to pay this high price shows that it is well aware that on the crude economic level an efficient and complete medical service will pay a good dividend in health, happiness, and efficiency in work.

There are, of course, dangers in a State medical service —the dangers of dogma, timidity, lack of incentive, administrative hypertrophy, stereotyped procedure, lack of intellectual freedom. Aware of these dangers, the medical profession has conducted vigorous opposition to the various White Papers and Bills that had their starting-point in the Beveridge Report of 1942. Proceeding from one point to the next over a period of six years, some members of the profession tend to overlook the cumulative gains, many of which were described in a leading article in the *Journal* of May 15, 1948, and the whole summarized succinctly by the Chairman of Council at the Representative Meeting on May 28, which as a result decided to advise the profession to co-operate with the Government in the National Health Service which begins next Monday. The outcome of a prolonged struggle in which there has been vigorous give-and-take on both sides is the preservation of the essential professional freedoms in the administrative framework provided by the Government. The medical profession, freed from a whole-time full-salaried service, now has the opportunity to mould the new Service in a real partnership of enterprise with the Minister and Ministry of Health. As Dr. H. Guy Dain observed in a letter to *The Times* of June 18: "The profession will do its utmost to make the new Service a resounding success"; and again: "There will be no shortage of good will on the part of the profession . . . to make the new public service the best which is humanly possible under present circumstances."

Some doctors will stay outside the Service, and their decision to do so must be respected. But those who enter would do well to take Dr. Dain's words to heart and mind and co-operate willingly to overcome the many difficulties that will arise in a scheme of such magnitude. Mr. Bevan stresses that there will not be "overnight any miraculous removal of our more serious shortages of nurses and others and of modern replanned buildings and equipment. But the sooner we start, the sooner we can try together to see to these things and to secure the improvements we all want." The public, in spite of some glowing effusions in the popular press, is beginning to free itself from the illusions it previously had about the benefits to be expected on and after July 5. The doctor will need to exercise much patience and tact in the coming months if his patients demand—as some of them will—the impossible. But with good will many of these difficulties will be overcome.

The National Health Service Act does no more than provide a framework for the comprehensive medical service desired by both the profession and the public. No doubt mistakes will be made, and the machinery at times will creak. But if there is free and constructive criticism obstacles to efficiency will be removed. The new Service will, in fact, have to evolve over many years, and there will be much trial and error before anything like a perfect medical service comes into being. The medical man by his training has to be ready to adapt himself quickly to novel situations, and for this must keep his mind flexible. The Civil Servant by his training tends to move with caution and hesitation because, as Sir Ernest Gowers puts it,[1] "The official [must] be sure of escaping all imputation of putting his own interpretation on the law." But both have "true minds," and mutual understanding of each other's method of approach to a common problem should help to minimize the misunderstandings that will occasionally undoubtedly arise. We may note that Mr. Bevan sees administration as providing the "background," in this sentence from his message: "I shall want vigilantly to watch that your own intellectual and scientific freedom is never at risk of impairment by the background administrative framework, which has to be there for organizing purposes, but in which your own active participation is already secure."

[1] *Plain Words*. H.M.S.O. 1948. Price 2s.

Elsewhere in this *Journal* we print information about certain aspects of the National Health Service Act, and in our opening pages signed articles which have a bearing upon the administration of Medicine. Sir Lionel Whitby, in his Presidential Address at Cambridge, quotes Mr. Winston Churchill's saying: "The more one looks back the further one can look forward," and Sir Lionel takes his backward glance through the eyes of men famous in the Cambridge Medical School, from Linacre onwards. How much has happened in Medicine in recent years is illustrated by Sir Lionel's observation that one of his predecessors, Sir Clifford Allbutt, who died in 1925, was born before the introduction of anaesthesia, and witnessed the development of bacteriology, of antiseptic and aseptic surgery, of Ehrlich's work on chemotherapy, of the discovery of *x* rays, radium, and of vitamins. The advances in Allbutt's lifetime have been almost equalled by those which have taken place since his death 23 years ago.

"There are none who can doubt," Sir Lionel says, "that because of the advance of science . . . the cost of an illness is beyond the purse of the average person." More than £1,000, he adds, may be required for the treatment of one person with pulmonary tuberculosis for which a thoracoplasty operation is required. The economic factor, he believes, has been potent in hastening a State medical service; and a second factor has been the occurrence of three wars within the first half of the present century. But another and perhaps more powerful impetus towards the evolution of a State medical service has been the public concern with the control of disease and the promotion of health that began afresh as a result of the efforts of the great pioneers of the public health service 100 years ago. How the State became progressively aware of its responsibility for the health of the public and devised machinery for expressing it is told in this issue by Sir Arthur MacNalty.

One of the most remarkable developments of the public health movement was the growth of the health services administered by the London County Council, which finally came to manage the largest hospital service in the world. It is appropriate, therefore, at this moment to record, as Sir Allen Daley so ably does in this *Journal*, the history of the L.C.C.'s contribution to an organized medical service now to become dissolved and largely merged in the National Health Service. Those who may fear that compulsion will be a feature of a State medical service may find comfort in the fact that vaccination ceases to be compulsory after July 5. And the epilogue to this is told by the foremost medical stylist of the day, Professor Major Greenwood.

In looking back with the aid of our distinguished contributors to this *Journal* we may thus better be able to see the new National Health Service in the perspective of history. The pattern of events becomes clear, and we see the medical man, intensely individual, becoming more and more aware of his responsibility to the community. This was shown dramatically in the wars of 1914–18 and 1939–45. The Armed Forces have never been so well looked after, and Medicine has never made such a powerful contribution to victory, as during the war from which we have just emerged. In his Croonian Lectures, printed elsewhere in this issue, Dr. E. R. Boland with telling examples illustrates the successes and some of the mistakes that came from an attack on disease planned on the best available sources of information. In his second Lecture he seeks to apply the lessons of war to the problems of peace, believing that the National Health Service Act "does render possible the planned solution of many problems hitherto insoluble." This must, indeed, be the hope and inspiration for the future. A host of individuals have unravelled the complexities of tuberculosis, the theme of Dr. Boland's second lecture. The urgent need now is for the planned attack on the basis of the best available sources of information, and Dr. Boland calls for "a campaign on a scale and of an intensity that have not so far been possible." The test of the success of the National Health Service will be found in the way such remediable evils as tuberculosis are overcome. But, first, scarcity of skilled persons and shortage of equipment and institutions must be made good, and after that the opportunity for co-operation between the profession, the public, and the Government in building a healthy Britain will be grasped eagerly.

THE SPENS PRIZES FOR SPECIALISTS

Few would disagree with the recommendation of the Spens report on remuneration of consultants and specialists that in the National Health Service there should be financial recognition of professional ability above the average. Few would dispute that the provision of money for this purpose for a third of all consultants and specialists is generous. Yet the idea that these "prizes" should be at the disposal of a central national committee has evoked little enthusiasm. In an article in the *Sunday Times* Lord Moran likened them to the Nobel Prizes. This would seem to be a false and misleading analogy. For those who will work whole-time as specialists in the National Health Service the additional awards of the Spens report represent higher salary grades. The logical procedure would be to attach these higher salaries to jobs of higher responsibility, and as the Service evolves it might well be expected that such jobs will of necessity have to be created.

But apart from this we see in the proposed establishment of a central committee a movement that is contrary to the wishes of the profession and the intention of the Minister—namely, that as much responsibility and initiative as possible should devolve on the peripheral structures of the National Health Service. The Spens report stresses the need for equality of status between hospitals so that "in the hospital system of the future there should be a more uniform level of hospital efficiency throughout the country, a better distribution of specialists, and permeation throughout the hospital service of each region of the influence of the university centre." To put such financial power as is proposed in the hands of a national committee would seem to be entirely contrary to the above principle of the Spens Committee. And that the professional nominations to the national committee should be made by the Royal Colleges and Corporations would seem to use these institutions for purposes for which they were

not devised. Dr. P. Willcox, in a letter elsewhere, reminds us of the observation of Lord Dawson, outstanding among past Presidents of the Royal College of Physicians, that the College was not founded for the purpose of exercising control over medical practice. No control is more powerful than financial control, and if the Colleges persist in seeking to secure this invidious position they may come to regret it.

If there is to be a more uniform distribution of specialist skill throughout the country, and if all hospitals are to be brought up to the level of the best, then these extra financial inducements should in the long run also be uniformly distributed. There is a good case for making them available to the hospital regions in proportion to the numbers of consultants and specialists in the regions. The mechanism for recommendation would then be a professional committee of the Regional Hospital Board. Each region would have its share of the total to award to those of outstanding merit chosen by men on the spot—at the periphery and not at the centre. It may be that in the first years of the Service Region X will not have men fit to receive, say, the highest award of an additional £2,500 a year. It might even prove to be the case that there were very few men who in the judgment of their fellows should receive the second award. But this would indicate that the community in Region X was being less well served by specialist skill than other regions. This could be remedied by the filling of hospital vacancies in Region X by men induced to go there by the attraction of a salary (whole or part) in the higher grades recommended by the Spens report.

It is important to keep the scheme for making the Spens awards flexible and to devise it with an eye on the ultimate objective of the Service and not on the state of affairs as they are to-day. It might be wiser to avoid the fixed percentages—4, 10, and 20—recommended, and instead to provide that the total should be available for distribution to 33⅓% of the consultants and specialists in proportions that will be decided by the natural rise and fall of talent in the profession. If the regions had the first and most important say in recommending those whose work deserved higher pay, a central committee of the kind proposed might then fall into place and provide the necessary check and balance to the occasional error of judgment on the part of the region. But unless the weight of the choice lies where it should belong, at the periphery, endless trouble lies ahead. The Colleges and Corporations are so closely bound up with the teaching hospitals, and the influence of London is so predominant, that to give them this financial power over the consultants and specialists of Britain would hamper the aims of the hospital service as set forth in the Spens report. "From the viewpoint of the patients," the report states, "it is desirable that modern advances in Medicine should be made available in areas outside the radius of the present teaching centres. In these circumstances it is obviously important that the status of the area hospital centre should be in no way inferior to that of the teaching hospital, and that both should be able to attract specialists of the highest calibre."

It is to be hoped that no hasty decision in this matter will be reached, and that consultants and specialists will be energetic in presenting their considered views on it.

THE CHEMOTHERAPY OF FILARIASIS

Filarial infections are widely distributed in the Tropics. Those due to *Loa loa* are associated with the intensely irritating but largely self-limiting Calabar swellings; those caused by *Wuchereria bancrofti*, however, produce serious disability, with sequelae such as lymphangitis, lymphadenitis, or elephantiasis. Because there is no specific treatment many substances have been tested: arsenic, mercury, copper, zinc, tin, "suramin," acridine derivatives, iodine, pamaquin, aniline dyes, emetine, and cobra venom, to mention only a few, have all been used without any definite results. Some success has been obtained with sulphonamides in eliminating the streptococci which appear to be responsible for the recurrent attacks of lymphangitis.

In 1919 Sir Leonard Rogers[1] first used sodium antimonyl tartrate with considerable success, but though his findings were confirmed by Day[2] in Egypt and by Das[3] in India tervalent antimony preparations have only rarely been employed in infections due to *Wuchereria bancrofti*. During the war in the Pacific many Americans became infected with this parasite, and more intensive efforts were therefore made to discover efficient chemotherapeutic remedies. The search for such remedies was greatly helped by the discovery of a naturally occurring filarial infection (*Litomosoidès carinii*) in the cotton rat, a far more convenient animal for large-scale chemotherapeutic studies than the dog infected with the filarial heart worm, *Dirofilaria immitis*. After preliminary investigations on infected rats Culbertson and his colleagues,[4 5] who are responsible for some of the new approaches to the chemotherapy of filariasis, attempted the cure of the disease in man, having come to the conclusion that the most promising compounds were salts of antimony. One hundred and fourteen patients infected with *Wuchereria bancrofti* were treated, 35 with "neostibosan," 11 with "neostam," 6 with "urea stibamine," 5 with "stibanose," 15 with stibophen ("fouadin"), 20 with "anthiomaline," 4 with tartar emetic, and 18 with a tervalent arsenical compound, melarsen oxide, which has some value as a trypanocidal agent.

The drugs were given in the maximum tolerated doses for varying periods of time, in the case of neostibosan generally for 40 days. With all the compounds except stibanose and neostibosan toxic results were so severe that treatment had often to be abandoned. Stibanose, though not toxic, was ineffective, but with neostibosan 23 of 35 patients lost all microfilariae, while in 7 others reduction of microfilariae in the peripheral blood stream was considerable—unlike the untreated patients, in whom the reduction was insignificant. It was often 15 to 18 months before microfilariae disappeared from the peripheral blood after treatment with neostibosan, and this suggests that the action of this compound is on the adult worms rather than on the embryos. These results show that, provided patients are treated with a quinquevalent antimonial such as neostibosan before complications have developed, the infection can be successfully eliminated in a large percentage of cases.

Another approach to the chemotherapy of filariasis has been made by Welch[6] and Wright *et al.*,[7] who found that *in vitro* a number of cyanine dyes inhibit the oxidative mechanism of the adult worms. One of the most promising of these cyanine compounds is 1-amyl-2, 5-dimethyl-3-pyrrole (1,6-dimethyl-2-quinoline) dimethine cyanine chloride. This was given in doses of 0.1 mg. per kg. of body weight every 8 hours for 18 doses by intraperitoneal

1 *Lancet*, 1919, **2**, 604.
2 Ibid., 1921, **1**, 525.
3 *Ind. J. med. Res., Science Congress No.*, 1920, p. 44.
4 *Puerto Rico J. publ. Hlth*, 1946, **22**, 139.
5 *Trans. R. Soc. trop. Med. Hyg.*, 1947, **41**, 18.
6 *Science*, 1947, **105**, 486.
7 *Fed. Proc.*, 1947, **6**, 387.
8 *J. Lab. clin. Med.*, 1947, **32**, 1293, 1304, 1314.
9 *Puerto Rico J. publ. Hlth*, 1947, **23**, 294.

injection to infected cotton rats and was found to kill all adult worms. Judgment of the efficacy of these cyanine compounds must await studies in man now being carried out at the School of Tropical Medicine, San Juan, Puerto Rico. The only chronic toxic manifestation following very large doses is apparently some degree of reversible renal damage.

Even more promising results have been obtained with piperazine derivatives by Hewitt and his colleagues.[8] In dogs infected with *D. immitis* the two most effective compounds are l-carbethoxy-4-methylpiperazine hydrochloride and l-diethylcarbamyl-4-methylpiperazine hydrochloride. The oral or intraperitoneal administration of the former to dogs is invariably followed by salivation, nausea, and muscular weakness, but the latter is well tolerated, and after doses ranging from 3 to 100 mg. per kg. the microfilarial count in the blood falls precipitately in twenty-four hours and remains negative or at a very low level for as long as treatment is continued. Good results have also been obtained in cotton rats, which were treated with 10 to 25 mg. per kg. of body weight three times daily for 30 days. Under the name of "hetrazan" this compound has been used by Stevenson *et al.*[9] in the treatment of 26 patients infected with *Wuchereria bancrofti*. The drug was given by mouth in doses of from 0.5 to 2 mg. per kg. of body weight three times a day for from 3 to 22 days; in one instance a dose of 2 mg. per kg. was given thrice daily for 22 days. No toxic reactions were seen except in those receiving the largest doses; these sometimes caused fever for forty-eight hours and some enlargement of the lymph nodes draining the extremities, and of the spermatic cord, associated with regional lymphadenitis. In nine cases the blood became negative on the second day of treatment and in 13 it continued completely negative from 10 to 83 days after treatment; in others there were only a few microfilariae left in the blood stream. Hetrazan appears to be the most active filaricide yet used in man.

BACTERIOLOGICAL EXAMINATION OF SHELLFISH

It is worth recalling that during the last 30 years there has been no confirmed report of bacterial disease conveyed by shellfish from approved purification installations; but though approved methods of purification can be assumed to render shellfish safe for human consumption it is desirable to use a standard method of bacteriological examination to control the marketing of unpurified shellfish and to guard against the possibility of secondary pollution. Such a method should give an index of the degree of faecal pollution, should be simple and accurate, and should produce a result overnight. It is agreed that the best indication of recent sewage pollution is provided by an estimate of the numbers of *Bact. coli* of faecal type. Clegg and Sherwood[1] have recently drawn attention to some deficiencies of existing techniques. The earlier methods, developed by Eyre and his colleagues and by Houston, of examining individual shellfish or pools of shellfish by inoculation into liquid media give results which are unduly influenced by chance. The examination of pooled shellfish by a technique similar to that used for the examination of water is also highly inaccurate. Bigger's somewhat lengthy procedure, in which dilutions of suspensions from ten separate shellfish from each batch are made in lactose bile broth, eliminates some but not all of the inaccuracies.

Less frequently inocula have been seeded on solid media, which have the virtue of giving a direct count. In the method now recommended by Clegg and Sherwood advantage is taken of their observation that *Bact. coli.* of faecal origin are virtually the only organisms producing red colonies on MacConkey agar incubated at 44° C. It is rarely necessary to sterilize the shells before examination, and in routine tests individual shellfish can usually be pooled. Except in special circumstances the shell water is discarded. Bivalves are cut up in a way that releases the bacteria from stomach, rectum, and gills, and univalves are ground with sand in a mortar. The minced flesh is vigorously shaken in a stoppered cylinder with a known volume of water. The count is then made by the roll-tube technique, dilutions of the suspension being added to 10-ml. quantities of a modified MacConkey agar in tubes (15 × 2.5 cm.), which are then rolled, preferably with a rolling machine. The results of replicate tests indicate that greater accuracy and consistency are attained by this method than by the procedures used hitherto.

With the proposed test it is suggested that shellfish should be regarded as satisfactory if four out of five samples from the same source are free from faecal *Bact. coli* in 1 ml. of body tissue. The detection of more than two or three such organisms per ml. in any one sample indicates the need for investigation.

J. Hyg., Camb., 1947, **45**, 504.

THE TOXICITY OF CADMIUM

The increasing use of cadmium in alloys, solders, photography, dyeing, plating, waterproofing, and also as a neutron absorber has led to its recognition as a potential industrial hazard. Special attention has been focused on the danger of inhalation of cadmium oxide fume since the occurrence in Canada in 1937 of two fatalities due to the accidental emission of fume from an annealing furnace.[1]

Acute poisoning from inhalation of cadmium produces lesions in the lungs both in men and animals. In the latter they appear in three distinct stages; in man only the first two have been so far verified.[2] The first stage is that of acute pulmonary oedema, due to increased capillary permeability, lasting for about three days; in its severest form it may cause death from anoxia. In the second stage proliferative interstitial pneumonitis develops; it lasts until about the tenth day after exposure and is characterized by epithelial and fibroblastic proliferation of the alveoli. In the two fatal cases death took place during this stage. In experimental animals a third stage occurs, that of permanent lung damage in the form of perivascular and peribronchial fibrosis.

The question arises whether men who survive exposure to large doses of cadmium oxide may develop residual pulmonary fibrosis and disability from loss of pulmonary efficiency. Another question which has not yet been fully answered is whether any significant disability may arise from long-continued exposure to concentrations too low to produce recognizable symptoms. A syndrome following such exposures for periods up to four years has been described; it is characterized by vague motor difficulties, pain in the lower limbs, pelvis, and groin, and by striae in the long bones seen in *x*-ray films.[3 4] In addition to pulmonary symptoms there have also been reported loss of appetite and weight, constipation, fatigue, headache, and a yellow cadmium ring on the teeth.[3 5]

In a recent investigation[6] 20 workers exposed for varying periods to varying concentrations of cadmium dust and fumes were repeatedly examined, but no definite syndrome

[1] Bulmer, F. M. R., Rothwell, H. E., and Frankish, E. R., *Canad. J. publ. Hlth*, 1938, **29**, 19.
[2] Paterson, J. C., *J. industr. Hyg.*, 1947, **29**, 294.
[3] Barthelemy, P. M., and Moline, R., *Paris méd.*, 1946, **36**, 7.
[4] Lafitte, A., and Gros. A., *Pr. méd.*, 1942, **50**, 399.
[5] Alsberg, C. L., and Schwartze, E. W., *J. Pharmacol.*, 1919, **13**, 504.
[6] Princi, F., *J. industr. Hyg.*, 1947, **29**, 315.
[7] Barrett, H. M., Irwin, D. A., and Semmons, E., ibid., 1947, **29**, 279.
[8] Barrett, H. M., and Card, B. Y., ibid., 1947, **29**, 286.
[9] Harrison, H. E., Bunting, H., Ordway, N. K., and Albrink, W. S., ibid., 1947, **29**, 302.

could be recognized, the only characteristic finding being the yellow ring on the teeth. Nevertheless, in all the continuously exposed individuals absorption of cadmium could be demonstrated by the presence of significant amounts in the blood and urine. The results of this investigation suggest that in chronic exposure to cadmium there is a rapid elimination from the body and no cumulative effect.

By animal experiments,[7] and by an investigation of the actual atmospheric concentrations in conditions reproducing as nearly as possible those of the original accident,[8] an attempt has been made to calculate the concentrations which may prove fatal or produce severe acute intoxication. It is thought that a minimum dosage of 2,500 mg. per cu.m. may be fatal for man, and that a concentration of 0.1 mg. per cu.m. (representing a cumulative dose of 50 mg. per cu.m. for an eight-hour day) allows an adequate margin of safety for industrial workers. It has been suggested on the basis of animal experiments[9] that injections of 2,3-dimercaptopropanol (BAL) may be an effective form of therapy in acute intoxication, probably by the formation of stable non-toxic cadmium mercaptides, but large doses are necessary and are of little value after the first day.

HEBERDEN'S NODES

The thought of associating the name of William Heberden with a society for the study of rheumatism was a happy one. A collection of his papers was published after his death by his son, also a distinguished Fellow of the Royal College of Physicians, and this included a description of "those little hard knobs, about the size of a small pea, which are frequently seen upon the fingers, particularly a little below the tip near the joint." Heberden stated that they were not connected with gout and described their characteristics, but in spite of this they have been commonly described by the laity as "chalk-stones," and even doctors have fallen into the same error until recent years. This is not the only mistake, for they are not infrequently regarded by sufferers as the early sign of rheumatoid arthritis and the inevitable precursor of crippling disease in many other joints. It is noteworthy that though these bony nodules are a definite form of osteoarthritis they begin characteristically in the terminal joints of the fingers, while rheumatoid arthritis never begins in these joints, and this may be a guide in diagnosis. One of the other forms of arthritis—namely, psoriatic arthritis—may first develop at this site, but this has other distinguishing features.

Since the nodes often first appear as small cystic swellings on the back of the terminal joints of the fingers and are unsightly, patients sometimes prick them and press out a semi-glutinous substance. If sepsis does not follow this procedure healing takes place, but the nodules quickly reappear. Surgical removal has the same effect, the nodule which has been operated on being usually larger than those which have not been treated.

The nature and characteristics of these nodes have been closely studied by R. M. Stecher in Cleveland, who has recorded some interesting facts supported by statistics based on the study of 6,913 cases and controls.[1] Men give a history of local trauma more often than women, and the incidence is earlier in such cases; minor effects of occupation may also be a responsible factor. The idiopathic type is rarely found before 40, but occurs with increasing frequency after that age. The influence of heredity is important, the mothers of affected women being found to have the condition twice as often and the sisters three times as often as would have been expected in the normal population. About one-third of white women become affected if they live long enough, but it is much less common in men. Stecher concludes from a study of his statistics in their relation to Mendelian principles that the data support the hypothesis of a genetic mechanism of Heberden's nodes involving a single autosomal gene, sex-influenced, dominant in females and recessive in males.

Osteoarthritis in other joints appeared to be more common in women with Heberden's nodes than in a control series, though objective evidence was present in only 12 of a total of 94 patients. Crepitus in the knees was detected in 34 of these, but this symptom is not necessarily a forerunner of future joint disability.

In a series of 112 patients and 92 controls no significant association between the incidence of hypertension and Heberden's nodes was discovered. In a further series of 82 women with hypertension Heberden's nodes occurred no more frequently than would be expected in the normal population. The opposite view is often held, but is thus shown to be unfounded. No association with obesity was discovered, though there is ample evidence in the literature and in general practice that osteoarthritis in other joints is frequently associated with obesity, due probably to excessive weight-bearing.

Though the ages at which the nodes first appeared in women showed a wide dispersion, ranging from 35 to 65, nearly half the patients noted a close relation in point of time between the development of the nodes and the menopause. An interesting observation was that Heberden's nodes do not appear if there is a defective nerve supply, which leads to disturbances of the vasomotor mechanism and to osteoporosis.

Dr. Stecher remarks that he has found no evidence indicating that the production of Heberden's nodes is influenced in the least by climate, occupation, diet, housing, environment, habits of living, the general state of nutrition, or conditions of general health. It is obvious that occupation has a bearing so far as the traumatic type is concerned, but apart from this it is probable that Stecher's generalization is soundly based and should be borne in mind in advising sufferers from this common trouble.

DIFFERENTIAL FERTILITY

The subject of the "Social Significance of Differential Fertility" was discussed at a meeting of the Population Association of America last year, and three of the papers which were read have recently been published. Though our knowledge of genetics is far greater than it was even one generation ago, the probable results of differential fertility have not been thoroughly investigated. One reason, as Dr. H. F. Dorn[1] notes, is that the eugenists of the Galton–Pearson School were over-confident that class differentiation in fertility—the fact that, statistically speaking, clever, well-educated, and relatively well-to-do people had smaller families than their less favoured fellow citizens—must lead to national degeneration. It is going a little too far to speak of them as "well-meaning but ill-informed." Galton and Pearson 50 years ago knew less of genetics than most educated people know now, but they knew as much as could be known in their time, and it is only human that a minority—and they were a minority—should strongly emphasize neglected truths. Still, they did, as we now know, underrate the importance of "nurture" almost as much as most people overrated it.

Another reason for comparative neglect is that our knowledge of mental traits is still meagre; a good deal of work has been done on tests of "intelligence," much less on the

[1] *Ann. rheum. Dis.*, 1948, **7**, 1.

[1] *Milbank mem. Fd Quart.*, 1947, **25**, 359.
[2] Ibid., 1947, **25**, 367.
[3] Ibid., 1947, **25**, 373.

conative aspects of the human psyche. As Dr. Gardner Murphy[2] urges, studies of temperament are, from the sociological point of view, quite as important as studies of cognition.

In his paper on population genetics Dr. H. Snyder[3] shows very clearly that even with absolute selection against a recessive trait it will persist in the population for many generations. An original proportion of 10% will be reduced to 1% after 7 generations, say 200 years. When the selection is not absolute—in differential fertility it will not be absolute—the time will, of course, be longer.

If one asks, "Is the present pattern of differential fertility lowering the average quality of our population?" Dr. Dorn thinks it is still "incapable of scientific answer." But "we do have sufficient evidence to be sure that a large proportion of the recruits of the next generation come from the classes of our population which are the least able to provide maximum cultural and health advantages." This is a truth which members of the medical profession are better able to realize than any other citizens.

NAVAL MEDICINE AND RESEARCH

The Royal Naval Medical School was established in 1912 as part of the Royal Naval College at Greenwich.[1] Courses were organized for medical officers on entry, and special classes were arranged for staff surgeons to prepare them for promotion to what was then the rank of fleet surgeon. Research work has always been carried out at the School, mainly in the fields of epidemiology and hygiene. Dudley's well-known investigations into the prophylaxis and epidemiology of diphtheria, the work of Frederick on water supply and the hazards of confined spaces, and that of Rainsford on typhoid vaccine are examples. For many years the School has produced typhoid and other vaccines, and in fact the commercial value of these vaccines has in most years outweighed the cost of salaries and upkeep of the whole of the Naval Medical School.

The outbreak of war in 1939 ended the association of the School with Greenwich. A large house in Clevedon, Somerset, was taken, and there the work of turning out vast quantities of biological products was continued. For example, a large amount of penicillin was produced until 1946, when it was no longer necessary or economical for the Navy to produce its own supplies. The interest of the School in bacteriology and preventive medicine will continue, but in recent years it has been increasingly concerned with other matters "pertaining to the health, efficiency, and well-being of Naval personnel."

The unhappy expression "Personnel Medicine" has crept into use in the British and United States Navies to cover this aspect of social medicine. Since 1942 the Navy has been linked with the Medical Research Council through the Royal Naval Personnel Research Committee, which advises the Admiralty on biological, medical, and physiological problems. One aspect of the work of this committee was fully discussed in a paper by Ellis which we published recently.[2] The Navy also has its own physiological laboratory, which was opened at Alverstoke in 1942 under the joint auspices of the Royal Naval Scientific Service and the Medical Department of the Navy.

Amalgamation of this naval physiological laboratory and the Naval Medical School is proposed, and it is hoped that eventually a large Naval Medical Research Institute will be formed. Close partnership between the Royal Naval Scientific Service and the Medical Branch will then be more than ever necessary.

[1] *Admiralty Bulletin No.* 7.
[2] *British Medical Journal*, 1948, **1**, 587.

Scientific and mechanical developments are apt to outstrip provision for the physiological needs of the men who have to work the machines. In the Navy the machine has sometimes been regarded as more important than the man, and the biological point of view has been lost in a welter of inventions and gadgets. Inventions and gadgets there must be, but it is good to know that the Senior Service, like the Army, is studying closely the human factors concerned.

PHARMACOLOGY OF ANTIMALARIAL DRUGS

Increasing attention is being paid to the ordinary pharmacological actions of antimalarial drugs. Shteinberg,[1] a Russian worker, first observed that mepacrine, when injected intravenously, diminished the inhibitory action of the vagus on the heart; the same observation was made independently, though later, in this country by the Earl of Suffolk and Berkshire.[2] Further confirmation has been obtained recently by Gertler and Karp[3] in Montreal, whose work was begun at the suggestion of Babkin, who together with Ritchie[4] had shown quinine to have a similar action. Now since quinine and quinidine are known to be able to arrest auricular fibrillation it seemed likely that mepacrine would also be effective, and Gertler and Yohalem[5] therefore tested it in a series of eight patients. They observed that mepacrine restored the normal rhythm in four of these, but their results are clearly in need of confirmation. They gave mepacrine by intramuscular injection, together with 10 ml. of 1% procaine. The latter may have contributed to the result, since it lengthens the refractory period. Quinine and mepacrine are not the only antimalarial drugs to diminish the action of the vagus on the heart, "paludrine" does so too, as has been shown by Vane.[6] It is therefore possible that paludrine can also be used in auricular fibrillation.

The antimalarial substances have a similar effect on gastric secretion. Babkin and Karp[7] have found that quinine and mepacrine, when injected intravenously, depress the secretion of gastric juice which is produced by stimulation of the vagus nerves. The doses they used were large in relation to the doses ordinarily given to man. Thus a dog of 10 kg. received 0.2 g. of quinine bisulphate or 75 mg. of mepacrine. Petch stimulated gastric secretion by the injection of insulin in a number of patients, and he found in one that the injection of mepacrine counteracted this effect. Vane[6] has also reported that in cats the injection of paludrine reduces or inhibits the secretion of acid produced by histamine. The doses of paludrine required, however, were large. It is interesting and surprising that the three antimalarial substances, though chemically unlike, have a similar action on the heart and gastric secretion.

At the Annual Representative Meeting of the British Medical Association on June 26 Dr. E. A. Gregg was appointed Chairman and Dr. J. A. Brown Deputy Chairman of the Representative Body. Mr. A. M. A. Moore was appointed Treasurer of the Association for the period 1948–51.

The Bertram Louis Abrahams Lecture on "Curare and Curarimimetic Drugs" will be delivered by Dr. J. W. Trevan, F.R.C.P., F.R.S., before the Royal College of Physicians of London, Pall Mall East, S.W., on Tuesday, July 13, at 5 p.m.

[1] *J. Physiol., U.S.S.R.*, 1937, **22**, 252 (from *Chem. Abst.*, 1940, **34**, 7415).
[2] *Quart. J. exp. Physiol.*, 1939, **29**, 1.
[3] *Rev. canad. Biol.*, 1947, **6**, 229.
[4] Ibid., 1945, **4**, 346.
[5] *Canad. med. Ass. J.*, 1947, **57**, 249.
[6] Commun. to Brit. Pharmacol. Soc., Jan. 2 1948.
[7] *Canad. med. Ass. J.*, 1947, **56**, 137.

THE ADMINISTRATIVE STRUCTURE OF THE NATIONAL HEALTH SERVICE

CENTRAL HEALTH SERVICES COUNCIL

Sections 1 and 2 of the National Health Service Act of 1946 provide for the establishment of a Central Health Services Council and Standing Advisory Committees to supply the Minister with professional and technical guidance in the general administration of the new Service. The function of the Central Council is to advise the Minister on such general matters as it thinks fit relating to the services provided under the Act, or any services provided by local health authorities in their capacity as such authorities, and upon any questions referred to the Council by the Minister relating to those services.

The Council will consist of 6 *ex-officio* members and 35 other members appointed by the Minister. The *ex-officio* members are the persons holding for the time being the offices of: President of the Royal College of Physicians of London; President of the Royal College of Surgeons of England; President of the Royal College of Obstetricians and Gynaecologists; Chairman of Council of the British Medical Association; President of the General Medical Council; and the Chairman of the Council of the Society of Medical Officers of Health.

The 35 appointed members are: (*a*) 15 medical practitioners, of whom 2 shall be selected for their knowledge of mental illness and mental defectiveness; (*b*) 5 persons with experience in hospital management (not medical practitioners); (*c*) 5 persons with experience in local government (not medical practitioners); (*d*) 3 dental practitioners; (*e*) 2 persons with experience in mental health services; (*f*) 2 registered nurses; (*g*) 1 certified midwife; and (*h*) 2 registered pharmacists. Before appointing these 35 members the Minister is required to consult such organizations as he may recognize as representative of the persons specified in paragraphs (*a*) to (*h*).

The Minister is empowered to set up standing advisory committees on special aspects of the Service (e.g., medical, mental health, dental, nursing, pharmaceutical, etc.), consisting partly of members of the Council and partly of persons who are not members of the Council. These committees will be appointed by the Minister after consultation with the Central Council and with such representative organizations as the Minister may recognize. In addition, the Central Council itself may appoint committees, and the standing advisory committees may appoint subcommittees, and these bodies may include persons who are not members of the Council or standing advisory committees as the case may be.

The function of a standing committee is to advise the Minister and the Central Council upon such matters as it thinks fit relating to the services with which the committee is concerned and upon any question referred to it by the Minister or Central Council relating to those services. The committee may advise the Minister direct, provided that it also informs the Central Council of the advice it has given, and the Council may express its views on that advice to the Minister.

The Central Council is required to make an annual report to the Minister on its work and that of the standing advisory committees, and the Minister is required to publish the report to Parliament unless there is any reason of public interest for not doing so, when he may withhold it, in whole or in part, after consultation with the Council.

The Central Council will elect a chairman from its members. The chairman of a standing advisory committee will be elected by the committee from its members. These bodies may regulate their own procedure.

One-third of the originally appointed members of the Council will go out of office on March 31, 1950, another third on March 31, 1951, and the remainder on March 31, 1952. Similar provisions govern the tenure of office of members of the advisory committees, one-third retiring annually. Members of the Council and committees will be eligible for reappointment on the expiration of their terms of office.

MEDICAL PRACTICES COMMITTEE

The Medical Practices Committee is the pivot of the machinery of the Act for securing an adequate distribution of general practitioners. Doctors already in practice as principals can claim automatic inclusion in the Executive Council lists for the area in which they are practising. New entrants to public practice and doctors who wish to transfer their practices from one part of the country to another within the new Service will be required to obtain the consent of the Medical Practices Committee.

This Committee will consist of a chairman (a medical practitioner) and 8 other members appointed by the Minister. Of the 8 other members, 6 must be medical practitioners, at least 5 of whom are actively engaged in medical practice. The first Chairman will hold office until March 31, 1950. Of the 8 other original members, 2 will retire on March 31, 1950, 3 on March 31, 1951, and the remainder on March 31, 1952. Members may be reappointed to the Committee on the expiration of their terms of office.

The Minister has stated that applications to the Medical Practices Committee will receive automatic consent except (1) in an area where the Committee is satisfied that no further doctors are needed; and (2) where more than one doctor seeks to fill the same vacancy. In the latter case the Committee will be asked to observe the wishes of the existing partner(s) or principal where the vacancy is for a partner or assistant.

Before making its selection the Committee is required to consult the Executive Council concerned, and that body before expressing its views is required to consult the Local Medical Committee. The Committee may grant an application subject to the condition that the applicant is excluded from practising in a specified part or parts of the area. Although the Committee may refuse consent to a practitioner to establish a surgery in an area, he can accept patients from anywhere as long as he is prepared to visit them as may be needed.

A practitioner whose application has been refused, or granted conditionally, by the Committee has a right of appeal to the Minister, which must be exercised within seven days from the date on which the Committee informs him of his decision. (The Minister may extend this period.) If the Minister considers that the appeal can properly be determined without an oral hearing, he may determine the appeal summarily. If in the Minister's view an oral hearing is required, he will appoint one or more persons to hear the appeal. The appellant, the Medical Practices Committee, and the Executive Council may be represented at the hearing by counsel or solicitor or otherwise.

Apart from its functions relating to distribution, the Medical Practices Committee has another and equally important function—that of expressing an opinion on whether a proposed transaction involves the sale of goodwill within the meaning of Section 35 of the Act. If on consideration of the application of a medical practitioner or his personal representative the Committee considers that a transaction does not involve the giving of any consideration in respect of goodwill, it is required to issue to the applicant a certificate to that effect. This certificate will provide a defence to any charge which may be brought under Section 35 of the Act, unless the court holds that the applicant in obtaining the certificate failed to disclose to the Committee all the material circumstances or made any misrepresentation, in which case the court may disregard it.

HOSPITAL SERVICES

Regional Hospital Boards

The function of a Regional Hospital Board is to exercise on behalf of the Minister the general administration of hospital and specialist services in its region. The Minister has made regulations conferring on these Boards the powers necessary to enable them to guide and control the planning, conduct, and development of the services in their area.

The Board consists of a chairman appointed by the Minister and other members appointed by the Minister after consultation with (*a*) the University for the area; (*b*) representative organizations of the medical profession; (*c*) the local health authorities; and (*d*) such other organizations as appear to the Minister

Administrative Structure of the National Health Service

Diagram by F. H. K. HENRION, F.S.I.A.

to be concerned; and the original members of the Board include persons appointed after consultation with voluntary hospital organizations.

Specialist appointments will be made by the Boards on the recommendation of advisory appointments committees, predominantly medical bodies, which will be set up for the purpose.

Boards of Governors of Teaching Hospitals

Teaching hospitals for the purpose of the Act are those hospitals which have been so designated by the Minister. Each teaching hospital (or group) has its own Board of Governors, which will be responsible generally for administering the hospital on the Minister's behalf.

The Board of Governors will consist of a chairman appointed by the Minister and such other members so appointed as the Minister thinks fit, and of these other members: (*a*) not more than one-fifth are to be nominated by the University with which the hospital is associated; (*b*) not more than one-fifth to be nominated by the Regional Hospital Board(s) for the area; and (*c*) not more than one-fifth to be nominated by the medical and dental teaching staffs of the hospital. Other members are to be appointed after consultation with such local health authorities and other organizations as appear to the Minister to be concerned.

Specialist appointments at the teaching hospitals will be made by the Boards on the recommendation of advisory appointments committees. Where the teaching hospital is so designated before the appointed day the original members of the Board must include persons appointed after consultation with the governing body of the voluntary hospital concerned.

Hospital Management Committees

Each Regional Board is required to appoint, in accordance with a scheme to be approved by the Minister, Local Hospital Management Committees, one for each large hospital or group of hospitals. These management committees will, subject to the direction of the Regional Board or the Minister, exercise certain functions on behalf of the Board, including: (1) the appointment of medical staff in non-teaching hospitals up to and including chief assistant or registrar; (2) the provision of private accommodation under Sections 4 and 5 of the Act; (3) the making and recovery of charges for the supply, replacement, or repair of appliances; and (4) the payment of travelling expenses of patients.

The Hospital Management Committee consists of a chairman and other members appointed by the Regional Board, including persons appointed after consultation with: (*a*) the local authority(ies) in the area; (*b*) the Executive Council(s) in the area; (*c*) the senior medical and dental staff of the hospital (or group); and (*d*) such other organizations as appear to the Board to be concerned. Where the Committee is appointed before the appointed day, the original members must include persons appointed after consultation with the governing body of the voluntary hospital(s) concerned.

PERSONAL HEALTH SERVICES

Local Executive Councils

The Local Executive Council is responsible for the provision of personal health services by general practitioners and dental practitioners, and for the supply of drugs, medicines, and appliances in the area of each local health authority (county or county borough). In certain cases a single Executive Council covers the area of two or more local health authorities.

The Executive Council consists of: (*a*) a chairman and 4 other members appointed by the Minister; (*b*) 8 members appointed by the local authority for the area; (*c*) 7 members appointed by the Local Medical Committee; (*d*) 3 members appointed by the Local Dental Committee; and (*e*) 2 members appointed by the Local Pharmaceutical Committee.

The last three committees are committees representative of the medical and other professions concerned which are recognized by the Minister under Section 32 of the Act. Under the Minister's regulations the Executive Council is required to appoint a Finance Committee, Medical, Dental, and Pharmaceutical Services Committees and a Joint Services Committee to deal with complaints and disputes relating to the terms of service. The Executive Council is also required to appoint a Supplementary Ophthalmic Services Committee to make arrangements with medical practitioners and opticians having the prescribed qualifications for sight-testing and for the supply of optical appliances pending the provision of ophthalmic services through the hospital and specialist service.

The right of a general practitioner to opt for the £300 basic salary is to be subject to the recommendation of the Executive Council after consultation with the Local Medical Committee. The Executive Council will be empowered, where the local practitioners agree, to make a statutory levy to cover the administrative costs of the Local Medical Committee.

The first chairman of the Council will hold office until March 31, 1949. Thereafter the Council will appoint its own chairman. The terms of office of members will be three years, one-third retiring annually. Retiring members will be eligible for reappointment.

The Tribunal

The Tribunal will investigate cases where representations are made by an Executive Council, or, if the Tribunal thinks fit, by any other person, that the inclusion of a doctor, chemist, dentist or optician in the lists drawn up by the Executive Council would be prejudicial to the efficiency of the Service.

The Tribunal will consist of a chairman, who must be a practising barrister or solicitor of not less than ten years' standing, appointed by the Lord Chancellor, and will in each case include a member of the same profession as that of the person who is the subject of the inquiry, and one other member. The "other member" will be appointed by the Minister after consultation with Associations representative of Executive Councils. The "professional" member will be one of a panel of six appointed by the Minister after consultation with representatives of the professional organizations. The panel will consist of a medical practitioner, a dental practitioner, a registered pharmacist, a medical practitioner practising as an oculist, a sight-testing optician, and a dispensing optician. The "professional" member will be one of a panel of available members and not a fixed individual, so that the member may in each case be suitable in experience and otherwise to consider the particular issue before the Tribunal.

There is an appeal to the Minister against any direction of the Tribunal to remove a practitioner's name from the list. The Minister may confirm or revoke that direction and before reaching his decision must consult a special advisory committee.

Local Obstetric Committees

The function of the Local Obstetric Committee is to review the experience of practitioners who desire to practise midwifery as part of the general medical services to be provided under the Act and to answer calls by midwives for medical aid under the Midwives Acts. The Committee will draw up a list of approved local practitioners and will be entitled to indicate to those who are not accepted for such a list the need for further obstetric experience.

The Committee is fully professional in character, and is normally to consist of a consultant obstetrician appointed by the Local Medical Committee in consultation with the Regional Board, the medical officer of health to the local health authority, and two general practitioners nominated by the Local Medical Committee as being experienced in obstetrics.

Local Medical Committees

Under Section 32 of the Act an Executive Council in exercising its functions is required to consult the Local Medical, Dental, and Pharmaceutical Committees "on such occasions and to such extent as may be prescribed." The Minister may recognize a Local Medical, Dental, or Pharmaceutical Committee which is formed for an area of any Executive Council where he is satisfied that the Committee is representative of the members of the three professions in the area concerned.

Local Health Authorities

These are the present County and County Borough Councils. Each Local Health Authority must establish a Health Committee, to which will stand referred all matters relating to the discharge of its functions under the Act other than the power to borrow money or to levy rates. The Health Committee may

establish subcommittees at its own discretion and may appoint by co-option non-members to the Committee or subcommittees subject to the proviso that a majority of the Committee or subcommittee are members of the Authority.

The duties of the Local Health Authority are, in brief, the provision, equipment, and maintenance of Health Centres, maternity and child welfare, including a domiciliary midwifery service, health visiting, home nursing, ambulance service, after-care, and arrangements for vaccination and immunization.

THE SCOTTISH ACT

SOME POINTS OF DIFFERENCE

The Health Services Council

The Scottish Health Services Council has no *ex-officio* but eighteen medical members in a Council of 35. This was accepted following representations by the Scottish Negotiating Committee. The Scottish Medical Practices Committee consists of a chairman, who shall be a medical practitioner, and five other members, of whom three shall be medical practitioners actively engaged in medical practice.

Hospital Services

The main difference between the English and Scottish Acts is that the latter makes no differentiation between teaching and non-teaching hospitals. All come within the administrative jurisdiction of the Regional Hospital Boards.

Hospital Management Boards

Instead of being placed under Hospital Management Committees as in the English Service, hospitals are grouped under Hospital Management Boards. In almost all cases these Boards will have under their jurisdiction more than one hospital. The intention first expressed by the late Secretary of State, Mr. Westwood, was that these Management Boards should have rather more autonomy than is envisaged for the Hospital Management Committees in England.

Personal Health Services

There is no material difference in arrangements for general medical practice administration. The Executive Councils, of which there are twenty-five, consist of an equal number of lay and professional members. The same undertaking has been given that after the first appointment Executive Councils will be empowered to elect their own Chairmen.

The Tribunal

The Chairman of the Tribunal is in Scotland appointed by the Lord President of the Court of Session. A point of interest here is that the office of the Lord President is not affected by a change of Government.

Midwifery Service

Under the Scottish Act any practitioner on the *Medical Register* in contract with an Executive Council may undertake to do midwifery. There are no local obstetric committees.

The Local Health Authorities

For the purposes of the provisions of Part 3 of the Act the "Local Health Authority" is (*a*) for a large burgh, the Town Council; (*b*) for counties combined under the provisions of the Local Government (Scotland) Act, 1929, the Joint Council; and (*c*) for any county other than the aforesaid, the County Council. The Local Health Authorities are empowered, but not required, to co-opt medical members to their Health Committees. An interesting provision of the Act (Section 30) is that a Local Health Authority may contribute towards expenses incurred by any body including representatives of the local authority among its members and approved by the Secretary of State that may be set up to advise on the local co-ordination of any of the services referred to in Section 2 of the Act—i.e., services provided or which could be provided under the Act or any health services provided or which could be provided by Local Health Authorities or by education authorities.

AMERICAN REACTION TO HEALTH INSURANCE

[FROM A NEW YORK CORRESPONDENT]

Each spectator of the General Assembly of the United Nations is provided with a set of headphones and a small gadget consisting of a box with five knobs. By pressing each of these knobs in turn he can, if a bit of a linguist, enjoy each delegate's speech in English, French, Spanish, Chinese, and Russian. Although the absence of a common tongue may seem at first to be a bar between two nations, it also has certain advantages. It warns the stranger that he is on foreign soil and must be prepared to run across different customs, creeds, and ideologies. One of the greatest barriers to a fuller understanding between the English and the Americans is the fact that they share, or believe they share, a common language. It is imperative that the basic differences in American thought and speech should be borne in mind when one comes to examine their general reaction to such social measures as national health insurance. By and large it is almost certainly opposed to such a scheme, although it is difficult to estimate the rough proportions of those for and against, since the poorer people, who would most obviously benefit from such a scheme, have the least opportunity of voicing their opinions.

At present there is remarkably little medical care in this country which is not paid for by the patient or his relatives at the time of the illness. There are a certain number of medical services for the poor and destitute, but these are hardly adequate for the demands put upon them. The city of Washington, for example, with a population at present in the neighbourhood of 1,500,000, has only one municipal hospital where treatment can be obtained free. The long waiting lists and overcrowding of the New York hospitals are at present the subject of a good deal of discussion. These conditions are not improved by the fact that, even by English standards, municipal hospitals suffer from an appalling shortage of nursing staff. This is probably the result of the lack of domiciliary treatment here, since the large number of private hospitals offer an abundance of more attractive and better-paid work. Conditions vary from state to state and even from county to county, but as Washington is under the eye of the Senate and New York takes considerable pride in its municipal services it is safe to say that in many places elsewhere things are worse.

Something over 10% of the population overcome the difficulty by subscribing to privately controlled health insurance schemes, of which the Blue Cross, with a membership of many millions, is the largest. Most of these, however, resemble the Hospital Saturday Fund, and do not include the cost of medical attention or surgeons' fees. Moreover, they do not supply the answer to those who are improvident or too hard-up to pay the subscriptions. Nevertheless, the number who favour this type of insurance is rapidly increasing. Quite a few of the big employers of labour pay their employees' premiums to such schemes; some will pay part of it and, if the employee is willing to pay half of the premium for his wife and children, will match the contribution.

Hiring and Firing

In view of these conditions it may seem surprising that there is not a bigger demand for some form of Government-financed health service such as the British panel system. The answer lies in the American character, which may be accentuated at present because this is boom time and nearly everyone has money in his pocket. The American reserves the right to talk to everyone on equal terms. This applies to his boss, multi-millionaires, or even the President. Naturally it also applies to his doctor. The American Medical Association, believing that "knowledge avoideth pitfalls," has made a conscientious attempt to give the patient a basic knowledge of the subject, chiefly through their magazine *Hygeia*. Although this may have reduced morbidity and mortality figures it has also reacted on the doctor–patient relationship. There now exist hundreds of thousands of American patients who call in their doctor not for a diagnosis but for a consultation. They follow their haemoglobin levels and differential counts with absorbed

attention, and they insist on knowing the chemical structure and pharmacological action of any drug prescribed. When they are not satisfied, which is often, they can and do say, "I hired Brown to treat me for purpura. He was no good. He didn't understand a thing about it, so I fired him. I'm hiring me Smith now." The result of this sort of thing is that there is a very high turnover of patients, and those who like variety prefer to pay rather than have a service which might tie them down. It seems a fair view—when there's plenty of money about. This type of tragi-comedy is, of course, the exception rather than the rule, but in varying degrees it is played by a remarkable number of lay Americans. However, the proportion would not be high enough to take into account if there were not other potent factors to think of. One of these is historical.

When in 1923 the Harding Administration finally crumbled a number of that misguided President's aides were haled off to limbo. It has taken all of the interim years and all the moral fillip of the last war to get the Veterans' Administration back on to its feet again. General Omar Bradley has just resigned from its directorship, and his unassailable good name, coupled with his eagerness to incorporate the hospitals of the V.A. into a framework controlled by the medical schools, has gone a long way towards bringing the service into good repute again. It is important that it should, for the V.A. is America's only example of a centrally controlled health service.

Opposition to Social Measures

Apart from the patient there are three other groups to bear in mind when thinking of a health service—the politicians, the doctors as individuals, and the A.M.A. When England went to the polls in 1945 both Conservatives and Socialists had placed health legislation high up on their electoral programmes. The health service at that time was far in advance of anything that exists in America to-day, and so it may seem strange that politicians here have not interested themselves much in the subject. One possible answer is that America is an enormous gallimaufry of races, religions, preferences, and prejudices, and it is almost impossible to advocate any positive measure without immediately antagonizing some powerful section of the community. In the case of a health service run under Federal auspices the politician who advocated it would almost certainly make some enemies in his own state, for every state is very jealous in guarding its right of self-legislation.

There have, of course, been several Bills brought before the Congress on this subject, but each has been farmed out to the committees, and there they die a lingering death. This is, moreover, a particularly bad time to introduce this type of legislation, because any type of social measure smacks of "new dealing," an association which at present is tantamount to political death. The trade union bosses and labour leaders might have been expected to have put forward some measures of this type, and from time to time they have done so, but they are so divided among themselves that they find it difficult to agree even upon such matters as labour laws. If they pay any attention to the subject at all, they prefer private bargaining with the industrialist they are dealing with.

In general the American physician resembles his English prototype much more closely than do the patients of either country, for his training, work, and social levels are almost identical. Often he is a better business man than is the Englishman. This is not surprising in a country where any schoolboy worth his salt will supplement his pocket money by running a newspaper round and nearly all undergraduates work in vacation as hotel clerks, soda-jerks, lumberjacks, or at any other job that comes to hand. The medical men tend to prefer specialist work, but this is partly forced upon them by the patient's demands. Even so it does at times appear to be carried to rather absurd lengths. There is an ophthalmologist in one of the cities of the eastern coastboard who is interested only in patients suffering from glaucoma.

The average practitioner's chief objection to a health service is that it would be under the control of politicians, and for such he has a hearty loathing and contempt. There is little in America of that tradition of public service which inspires great men in England to a lifetime of arduous work. Such considerations probably influence the A.M.A. more than any others, for although it is vociferously opposed to any service under State control it has repeatedly offered to devise and administer a nationwide plan.

It seems almost indisputable that any national health service here would stand a better chance in its hands than in those of central or local government.

The A.M.A. cannot be accused of always trying to handle medical problems on its own. When the best approach is a legislative one it has been quick to seize it. The present Food and Drug Act in this country is more efficient than anything we have in Great Britain, and it is fair to say that much of the credit for its existence goes to the A.M.A. Probably the main reason for the superiority of this Act is because it was drafted and later strengthened in order to combat a greater menace than anything the British have had to face.

Until the original form of the Act was passed in 1902 there was virtually nothing to limit the choice and dosage of drugs used in any patent nostrum. A special favourite with many elderly maiden ladies, school marms, and other pillars of society was "Lydia E. Pinkham's Vegetable Compound." Its makers were willing to tackle more or less any human ailment but had a slight bias towards the therapy of "feminine disorders." Its devotees were equally enthusiastic, and many went so far as to take one, sometimes two, bottles a day. It was said to produce "a pleasing warmth, followed by a feeling of complete relaxation," and there seems little reason to doubt it, for its alcoholic content was 100 proof. Fortunately in those days of really free enterprise nobody needed ever to become a hopeless alcoholic, for there existed at the time a secret liquor cure sold by mail-order houses. The advertisement bore a spirited picture of a wife surreptitiously slipping the requisite dose into her husband's coffee, and guaranteed that after the first few treatments he would lose all desire to go hitting the high spots and would stay at home at nights. This forecast was almost 100% accurate, since each dose contained sufficient laudanum to immobilize an army.

Quite apart from these more dramatic aspects of American life, the A.M.A. has done an enormous amount of hard, progressive spade work. At the time of its inception no practitioner of any quality could possibly rely for training upon the resources of his country but had to complete his studies in Europe. At a later stage there were many medical schools completely unfitted to cope with the task they set out to do. Slowly and steadily, year by year, the A.M.A. has worked upon this task, raising the standard of the better schools, freezing out those that were past redemption, until to-day there is only one school which is below the recognized standards of the American Board of Examiners. In the last century the A.M.A. has raised American medicine from a morass of ignorance and quackery to an educated, well-organized profession equal to that of any other country in the world, and it is hardly surprising if it feels that it, rather than any other representative body in the United States, should take the lion's share in the organization of any health insurance scheme that may arise.

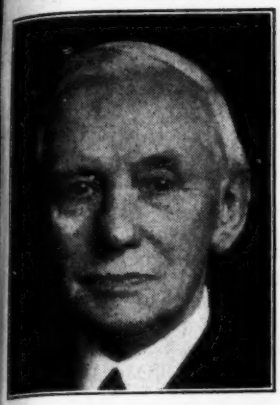
All students aged 18 and over will become liable to pay weekly contributions when the new National Insurance scheme comes into force on July 5. Contributions will be at the rates for non-employed persons (4s. 8d. a week for a man, 3s. 8d. a week for a woman) unless concurrently they are also gainfully occupied. Students whose total income does not exceed £104 a year can claim exception from liability to pay contributions and should obtain leaflet N.I.27 from the local National Insurance office or employment exchange. Any student claiming exception will still require a contribution card and should apply for it on Form C.F.6.

Acknowledgments.—The photographs of Viscount Addison, Mr. Neville Chamberlain, Lord Brentford, Mr. Arthur Greenwood, Lord Kennet, Sir Kingsley Wood, Mr. Walter Elliot, Mr. Malcolm MacDonald, Mr. Ernest Brown, Mr. H. U. Willink, and Mr. Aneurin Bevan are by Elliott and Fry, Ltd.; the photograph of Mr. John Wheatley is by Lafayette, Ltd.; and the photograph of Lord Melchett is reproduced by kind permission of Imperial Chemical Industries, Ltd., from the *I.C.I. Magazine* of January, 1947.

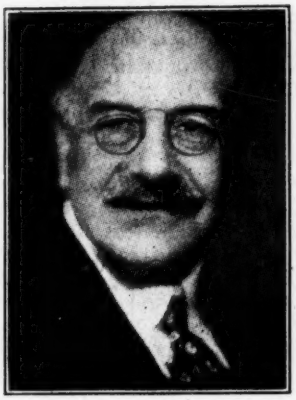
MINISTERS OF HEALTH

From the creation of the Ministry of Health in 1919 to the National Health Service Act, 1946

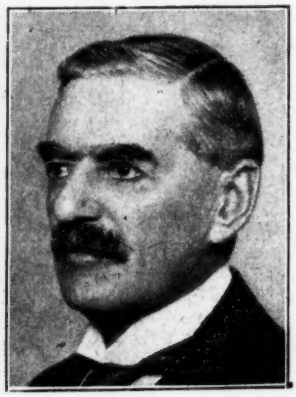
Viscount Addison



Lord Melchett



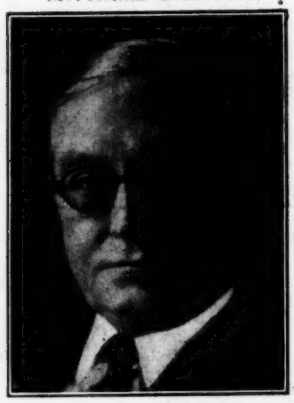
Mr. Neville Chamberlain



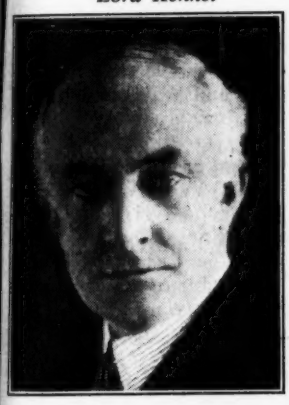
Lord Brentford

Mr. John Wheatley

Mr. Arthur Greenwood

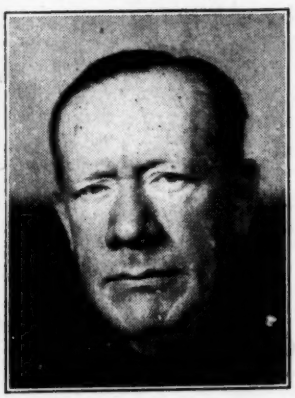


Lord Kennet



Sir Kingsley Wood

Mr. Walter Elliot



Mr. Malcolm MacDonald

Mr. Ernest Brown

Mr. H. U. Willink

Lord Addison, or Dr. Christopher Addison as he was then, was the first Minister of Health when the new Ministry was established by the Act of 1919. He is now the Lord Privy Seal and Leader of the House of Lords. He was succeeded in 1921 by Sir Alfred Mond, later Lord Melchett, who died in 1931. Mr. Neville Chamberlain was Minister of Health in 1923 and again from 1924 to 1929 and for four months in 1931. At the end of his first short term of office he was followed by Sir W. Joynson-Hicks, later Lord Brentford, who died in 1932. In 1924 there was another change and Mr. John Wheatley became Minister of Health. The Labour Party held office for the second time in 1929 and Mr. Arthur Greenwood took over from Mr. Neville Chamberlain and in 1931 was again succeeded by him. When Mr. Neville Chamberlain became Chancellor of the Exchequer, the new Minister of Health was Sir E. Hilton Young, now Lord Kennet. Lord Kennet had nearly four years as Minister of Health and Sir Kingsley Wood, who followed him, three years. Mr. Walter Elliot took over in 1938, and was succeeded after two years by Mr. Malcolm MacDonald. Mr. Malcolm MacDonald gave way to Mr. Ernest Brown, who in his turn was succeeded by Mr. H. U. Willink. Then on July 26, 1945, when Mr. Attlee became Prime Minister, Mr. Aneurin Bevan took office as Minister of Health. There have thus been fifteen Ministers in rather less than thirty years, with Mr. Neville Chamberlain, who died on Nov. 9, 1940, holding office on three occasions. The only medical men who have held office are Lord Addison, who was a distinguished anatomist, and Mr. Walter Elliot.

Mr. Aneurin Bevan

HOSPITAL SERVICES UNDER THE N.H.S. ACTS

FIG. 1

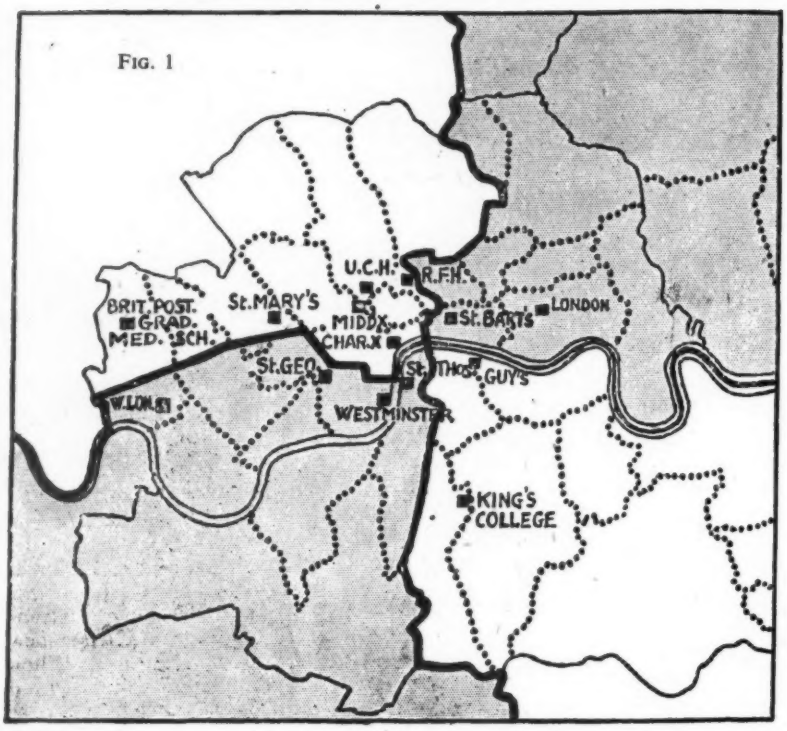
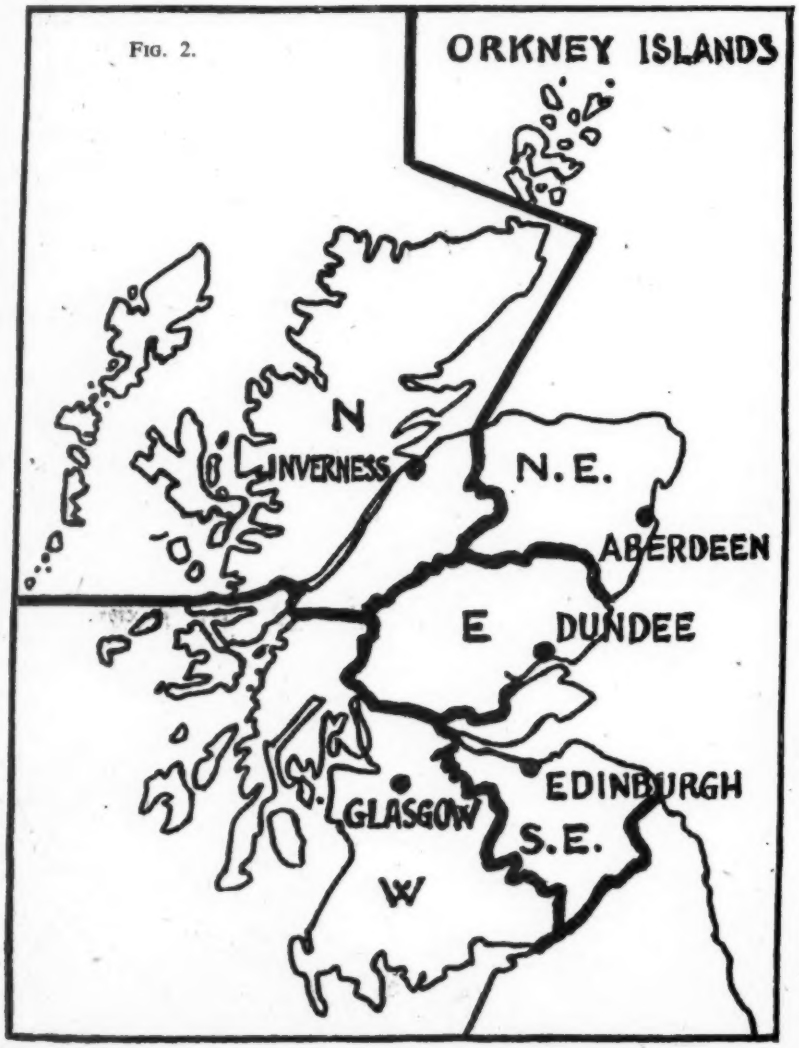


FIG. 2.



TEACHING HOSPITALS AND REGIONAL HOSPITAL BOARDS

As long ago as December, 1946, the Minister of Health laid before Parliament an Order defining the areas for which Regional Hospital Boards would be responsible under the National Health Service Act. Previously all the many bodies concerned had considered the provisional proposals for the boundaries of these areas (*Journal*, Nov. 30, 1946, p. 828). By the end of December the first maps of the proposed areas of Regional Hospital Boards were available (Dec. 28, 1946, p. 1000). The areas finally approved are indicated on the three maps here reproduced.

Once the areas were defined the next step was the appointment of the Regional Boards. On June 27, 1947, the Minister published an Order setting out the constitution of these Boards, and a few days later the names of the chairmen and members were made known (*Supplement*, July 5, 1947, p. 1). The members of Scotland's five Regional Hospital Boards were appointed later (*Supplement*, Nov. 8, 1947, p. 111).

The list of those hospitals which the Minister of Health disclaimed from the provisions of the National Health Service Act, 1946, was announced early this year and published in the *Supplement* of April 10 (p. 99). The Boards of Governors of teaching hospitals have been appointed only in the last few weeks. The names of the chairmen and members of the Boards of Governors of teaching hospitals in the London area appeared in the *Journal* of June 26 at p. 1250. The Boards of Governors of all other teaching hospitals in England and Wales were listed in the *Journal* of June 19 at p. 1198.

We published in the *Journal* of May 15 at p. 947 the National Health Service (Designation of Teaching Hospitals No. 2) Order, 1948, designating 26 teaching hospitals with their 60 constituent hospitals in the London area. The corresponding Designation of Teaching Hospitals (No. 1) Order designating teaching hospitals in the ten university medical centres in England and Wales and outside London appeared in the *Journal* of April 10 at p. 699.

There is already one alteration to the lists of the Boards of Governors. Mr. John Arthur Dewar has decided not to serve on the Board of Governors of the Westminster Teaching Hospital. There have been changes too in the Regional Hospital Boards on account of the death or resignation of certain members. These changes are as follows.

No. 2 Area—Leeds.—Delete Arnold Walker and substitute "Mrs. Nora Frenburgh, 24, Oak Lane, Lower Grange Estate, Bradford."

No. 3 Area—Sheffield.—Delete Prof. Edward Johnson Wayne and substitute "Dr. J. G. McCrie, Dean of the Faculty of Medicine, The University, 358, Mushroom Lane, Sheffield, 10."

No. 4 Area—East Anglian.—Delete Alderman William Brown and substitute "G. T. Vawser, Esq., 36, All Saints, Peterborough." Delete Oswald Chivers.

No. 5 Area—N.W. Metropolitan.—Delete Miss Elizabeth Cockayne and substitute "Miss Marriott, Middlesex Hospital, W.1."

No. 7 Area—S.E. Metropolitan.—Delete Miss E. K. N. Cumming.

No. 9 Area.—Oxford.—Delete Sir Oliver S. Franks. Delete Prof. Herbert John Seddon and substitute "H. A. Goddard, Esq., Bryntirion, Staunton Road, Headington, Oxford."

FIG. 1.—Teaching Hospitals in the London Area.

FIG. 2.—Areas of Regional Hospital Boards in Scotland.

No. 10 Area—South-Western.—Delete Egbert Cadbury and substitute "W. J. Carter, Esq., 18, Branscombe Road, Stoke Bishop, Bristol, 9."

No. 11 Area—Welsh.—Delete Alderman Timothy James Kerrigan and substitute "Mrs. H. Evans, J.P., 5, Pen-y-Wain Road, Cardiff." Delete Prof. Thomas Benjamin Davie, 65, Rodney Street, Liverpool, 1, and substitute "J. T. Morrison."

No. 12 Area—Birmingham.—Delete Daniel John Evans, Esq., and substitute "Alderman W. T. Bowen, 138, Cartland Road, Stirchley, Birmingham, 30."

No. 13 Area—Manchester.—Delete Prof. Daniel Dougal; George Gibson, Esq., C.H.; and Edwin Hall, Esq., J.P.

No. 14 Area—Liverpool.—Delete Thomas Henry Harker and substitute "David Brown, Esq., J.P., 12, Merton Road, Bootle, Liverpool, 20." Delete Prof. Thomas Benjamin Davie and substitute "J. T. Morrison, Esq., O.B.E., 26, Rodney Street, Liverpool."

FIG. 3.—Areas of Regional Hospital Boards in England and Wales. University centres are shown and also the county boundaries.

FRIENDS OF HOSPITALS

In an endeavour to preserve the voluntary spirit under the new regime the British Hospitals Association is promoting "Leagues of Friends" of hospitals, whereby each hospital would gather around it those who wished to continue in some form or other their old interest in its service. In explaining the idea to a press conference, Mr. J. P. Wetenhall, secretary of the Association, said that in some cases, notably in towns, such a league might be attached to a group of hospitals, but in the country, where hospitals as a rule were widely separated, and each knew little of the others, it could more appropriately be formed around one local hospital. Apart from securing certain amenities for patients over and above State provision, various means of expressing the community spirit in relation to the hospital might be found. Mr. Wetenhall instanced the case of a cottage hospital so situated that it might not be easy to get staff to go to it or to remain. Here much could be done by a League of Friends to help the staff, afford them entertainment, and bring them into social life outside the hospital. In innumerable ways help might be given to the hospitals, none of them applying universally, but all of them to some hospitals.

A League of Friends might be expected to provide a new assembly point for those who hitherto, because of their subscriptions or service, had been hospital governors. Mr. Wetenhall pointed out that the new boards and committees which have been appointed are representative partly of existing hospital experience obtained under the voluntary system and partly of a broader public interest. As time goes on, if there is not some focus to ensure continuing interest in the internal concerns of the hospital, there will be nobody of like hospital experience to fill the vacancies. Leagues of Friends would provide recruiting grounds of people familiar with hospital working, from whom in due time appointments might be made to fill vacancies on statutory bodies.

After July 5, donors, subscribers, or testators will be able, through the new management committees, to assign money to the hospital of their choice; but the idea of the British Hospitals Association is that, over and above any question of funds for hospitals, there should be some means of enlisting people who have hitherto served the hospitals as members of Ladies' Guilds, Samaritan Funds, and the like. Thus within the regional framework the old voluntary spirit may continue. The Association has published a memorandum on the subject suggesting how action can be taken locally, and it is preparing a suggested constitution for a League of Friends which could be modified to suit local requirements.

SURGERY OF CHILDHOOD

EXHIBITION AT GREAT ORMOND STREET

In connexion with the course of postgraduate lectures which have lately been given at the Royal College of Surgeons under the joint auspices of the Royal College and the Institute of Child Health, the general subject being "The Surgery of Childhood," a pathological exhibition has been arranged in the museum of the Hospital for Sick Children, Great Ormond Street. The purpose of those who have assembled the exhibition—Dr. M. Brodian, the curator, and Mr. Derek Martin, the assistant curator—has been to illustrate by means of specimens, charts, photographs, radiographs, and colour transparencies the theme of the lectures.

The museum of the Hospital for Sick Children possesses an unusual collection of pathological specimens of congenital abnormalities and diseases of infancy and childhood. To illustrate Mr. G. H. MacNab's lecture on "Surgery of the Newborn" specimens are displayed of Arnold–Chiari malformation of the cerebellum and of hydrocephalus. Another remarkable specimen in this section is of celosomus in an infant prematurely born in the twenty-eighth week and surviving for one hour; the fissure is shown in the specimen to extend from the manubrium sterni almost to the umbilicus. A case of non-rotation of the duodenum is illustrated—an anomaly of the second stage of rotation in the gut in a child of five. Other specimens showing aberrant renal vessels and renal calculi are designed to illustrate Mr. Twistington Higgins's lecture on the surgery of the upper urinary tract. Some unusual specimens of Wilms's embryoma of the kidney, the growth extending in one instance into the inferior vena cava, are included. A chart illustrates types of cerebellar tumours in childhood and the relation of the type to the likelihood of survival after operation—for example, the relative rarity of survival in the case of medulloblastoma and the greater likelihood in that of astrocytoma. The *x*-ray appearances in Hirschsprung's disease are shown, following a lecture on that subject by Mr. Harold Edwards. Two panels of colour transparencies illustrate a number of conditions found in infancy. There are also a number of exhibits of historical interest, including a volume of clinical notes by the late Sir Thomas Barlow, dated 1897, and a plaster cast, described as Dr. Cheadle's specimen, dated 1881, of a child patient with advanced rickets.

EMERGENCY BED SERVICE

ADMISSION OF PATIENTS TO HOSPITAL

The following letter is being sent by the four Metropolitan Regional Boards to all Local Executive Councils in their areas, and to all hospitals and medical officers of health.

It is the intention of the Metropolitan Regional Hospital Boards that, with the change in hospital ownership which takes place on the appointed day, there shall be the least possible disturbance of the present methods of admission of patients to hospital. The shortage of staffed hospital beds makes it essential that there shall be a channel through which hospital admissions can be arranged when practitioners have failed by direct application to secure admission to the hospital of their first choice. The Boards have accordingly made arrangements with King Edward's Hospital Fund for the expansion of the Emergency Bed Service to enable it to act on behalf of the Boards to deal with applications for admission. A medical officer of the Boards will be available at the office of the Bed Service.

The following information gives the general lines on which the system will work:

GENERAL

It is the intention that as far as possible admissions to hospitals should be arranged direct between the doctor and the hospital. When the services of the Emergency Bed Service are used patients will not be sent to any hospital until the Emergency Bed Service has confirmed that there is a vacancy and that the patient can be admitted, in which case transport will be arranged by the Service.

If free treatment is desired in any hospital not administered under the National Health Service, application must be made through the Regional Hospital Board.

Acute Sick.—Present procedure will remain generally unchanged. Doctors may apply for admission direct to the hospital of their choice or through the Bed Service.

Non-urgent Cases.—Hospitals will maintain waiting lists for non-urgent cases as at present, and will notify patients direct when a bed is available.

Chronic Sick.—There is at present a large number of unstaffed beds for patients in this category and it is unlikely that additional nurses for these beds will be forthcoming for a considerable time. It will be necessary, therefore, for rigid selection to be exercised as regards admissions. Where the case is one of medical urgency the practitioner will apply to the nearest general hospital, and, in the event of a bed being unavailable, will apply to the Bed Service for a vacancy. If the predominant need for admission is on social grounds, the Bed Service will make arrangements through the appropriate Medical Officer of Health for the home conditions to be investigated. If the case is not urgent the patient's name will be placed on the waiting list of the nearest suitable hospital.

Infectious Diseases.—The admissions procedure at present obtaining in the County of London area will be undertaken by the Bed Service. Applications for admission should therefore be made to the Service (Tel.: MONarch 3000). It is not the intention that uncomplicated cases of measles, chicken-pox, scarlet fever, German measles, or mumps shall be admitted to infectious disease hospitals unless the medical officer of health of the area supports the applications for admission. Applications should therefore be made through the medical officer of health.

Outside the County of London area doctors should apply direct to their nearest fever hospital or, in the event of failure to obtain a bed, apply to the Bed Service.

Maternity.—Maternity patients will normally be admitted either on medical or social grounds. In the case of the former admission will be arranged between the practitioner and the hospital concerned: in the latter a statement on social conditions will be required from

the local health authority. In cases of obstetrical emergency application can be made to the Bed Service.

Mental Cases.—Mental cases requiring urgent admission will be dealt with by the Duly Authorized Officer (who replaces the Relieving Officer), particulars of whom can be obtained from the appropriate local health authority. These officers will arrange for the admission of patients to mental observation wards or mental hospitals. Arrangements for the admission of voluntary patients under the Mental Treatment Act should be made direct with the appropriate mental hospital.

Mental Deficiency Act Cases.—Local health authorities remain responsible for the initial action—they should continue to arrange admissions direct with those mental deficiency institutions *within the National Health Service* which they now use. If free treatment in a mental deficiency institution *outside the National Health Service* is desired application must be made to the Regional Hospital Board and not to the institution.

Tuberculosis.—The Bed Service will not be concerned with tuberculous cases save to arrange admission of emergencies—e.g., haemoptysis, to a general hospital if required to do so. All recommendations for admission of tuberculous patients will normally come to the Regional Hospital Board through the tuberculosis officers. Practitioners will refer all cases to the tuberculosis officer, who will make the appropriate recommendation for sanatorium or other treatment. No application for sanatorium treatment should be made to the Service.

Convalescence.—Requests for information as to the availability of convalescent beds may be made to the Bed Service. Further details concerning this aspect of the work will be issued to hospitals as soon as possible.

Arrangements are being made to provide any necessary local admission centres throughout the Regions. The establishment of these centres will take time and it will not be possible to complete arrangements for all areas before July 5. The Bed Service has appointed officers to organize the admission system throughout the four Metropolitan Regions, and these officers will endeavour to call at all hospitals as soon as possible. Information concerning these centres will be issued locally. The London Offices of the Emergency Bed Service are established at 10, Old Jewry, E.C.2, and the telephone number is MONarch 3000.

Nova et Vetera

RARE MEDICAL BOOKS

Several very rare and very desirable ancient medical books are being offered for sale at Messrs. Sotheby's. On June 16 there was a good copy, calf-bound, of the *Clavis Sanationis*, by Simon Genuensis, published at Padua in 1474 by Peter Manfer. On July 13 and 14 the renowned collection of Baron Horace de Landau is being dispersed. This includes the *Chirurgia* of Petrus de Argellata, published at Venice in 1480 by Bendictus Genuensis. Pietro d'Argellata was Professor of Medicine at Bologna University, where he used sutures and drainage for wounds, performed trephinings, and even practised dentistry. This copy is bound in contemporary wooden boards, and is perfect but for one blank leaf. Even rarer, perhaps, is the *De Febribus* of Nicolaus Falcutius, Pavia, 1481. The author was a Florentine physician; this volume is the second part of his *Sermones Medicinales*, and the next following lot is the fifth part, named *De Membris Naturalibus*, Pavia, 1484; this is as rarely seen as the *De Febribus*. Then there is Marsiglio Ficino's *Consiglio contro la Pestilenza*, Florence, 1481. He was in Florence through the plague epidemic there of 1479 and described the symptoms and diagnosis of the disease, but had very vague ideas concerning treatment. The *Passionarius* of Garopontus, who was M.D. of Salerno about 1072, in a manuscript on vellum of the eleventh century dealing with pathology and therapeutics; its scope is indicated by some of the chapter headings, such as De Pipleumonia, De Anorexia, D' Sclirosi, De Proriasi, De Podagra, De Catalepticis, De Apoplexia. The *Hortus Sanitatis*, Strasbourg, 1497, is a complete copy of a book of which the British Museum contains only an imperfect example. Maimonides of Cordova (1135–1204) was a Hebrew doctor who was offered the post of personal physician to our Richard I, the Lionheart: the first printed edition of his *Aphorisms* after the teaching of Galen is that of 1489, Bologna, of which a perfect copy is included in this sale. Very rare is the *De Procreatione et Humanis Phisionomia* of Michael the Scot, published at Venice by Jacobus de Fivizano in 1477. Finally, there is another manuscript, partly on paper and partly on vellum of the fifteenth century, by Jean Michel Savonarola (not to be confused with Girolamo), who was born at Padua in 1384, practised there, at Salerno, Rome, Montpellier, and Paris, and became professor of medicine at Ferrara, where he died in 1461. He was a voluminous author and was the first to write on the significance of the pulse.

H. R.

Preparations and Appliances

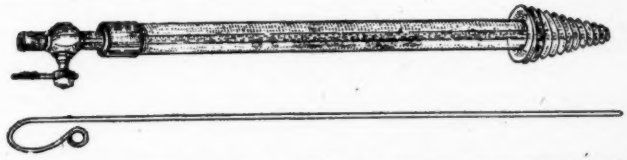
A PLASTIC INTRAUTERINE CANNULA

Mr. Ian T. Fraser, Obstetric Registrar, University College Hospital, London, W.C.1, writes:

A modification of the Leech–Wilkinson intrauterine cannula for use in hysterosalpingography with opaque media has been manufactured for me by Messrs. Vann Bros., Ltd., 63, Weymouth Street, London, W.1. This instrument, which is made of "coldlite" plastic, is 20 cm. long, and weighs 39 g. A metal tap fitted with a female mount to take a "record" syringe is incorporated in the lower end. The cannula is shorter and lighter than the usual metal type, but the barrel is slightly thicker (10 mm.). A stylet is provided.

The instrument is used in conjunction with a "coldlite" *x*-ray vaginal speculum, and the resulting pictures show a complete absence of metallic shadow, due to the fact that the plastic employed is non-opaque to *x* rays. In the film opaque medium is seen in the lumen of the tube, and there is sometimes backspill around the thread of the screw in the cervical canal and, more rarely, into the vaginal vault. The stylet, when fitted, projects 3 mm. beyond the tip of the cannula when the latter is inserted into the cervix. As the cannula is screwed tight the stylet should be removed. Slight pain is occasionally felt when the final tightening turn is made. During this operation no vulsellum is required to fix the cervix. After the injection of about 5 ml. of oily opaque medium (I usually employ "iodatol") the tap is turned to the "off" position and the syringe removed. Owing to the light weight of the cannula and the short length projecting outside the vulva the patient can lie in complete comfort with the cannula unsupported while waiting for the films to be developed. If the film shows no spill into the peritoneal cavity a further 2–3 ml. of oil may be injected. The instrument is thus particularly suitable where facilities for screening during the injection do not exist.

The instrument has also been used in pelvigraphy for the outlining of pelvic organs and tumours. A considerable quantity of light opaque medium ("uriodone" has proved satisfactory) is injected, the tap of the cannula closed, and the syringe removed. The patient's position can then be altered while the various films are taken.



The instrument can be sterilized by boiling for 10 minutes, the stylet being removed. When removing the cannula from the sterilizer care should be taken to grip the metal part and not the plastic barrel. The instrument requires a short time to cool before use. If cold sterilization is desired it may be immersed in a solution of oxycyanide of mercury, 1 in 4,000, for one hour. A solution of phenyl mercuric acetate, 1 in 10,000, is also suitable. After use with an oily medium the cannula should be cleaned by rinsing through with ether soap, followed by pure ether, and should be dried so far as is possible before being put away.

The following solutions have been found unsuitable for sterilizing the cannula: spirit, which destroys the cement junction between tap and barrel; "dettol," which damages the polished surface of the plastic if immersed for any length of time; and mercuric chloride or biniodide, which coat the surface of the metal tap.

Correspondence

The Royal College of Surgeons

SIR,—I regret that the Fellows of the College who signed the letter published in your issue of June 26 (p. 1258) feel that they have a grievance about the conduct of meetings which have been held in the College in recent years. They were conducted strictly in accordance with the By-laws and Regulations of the College. For the information of the general body of Fellows it will be well for the facts to be put on record.

The meeting held on April 28 of this year was summoned with the approval of the Council in response to a requisition signed by thirty-three Fellows. It was, as stated by your correspondents, the first meeting of Fellows since the National Health Service Act became law at which resolutions were in order. There had, however, been the Annual Meeting of Fellows and Members in November, 1947, when questions relating to the Act could have been the subject of resolutions; but no notices of motion were received and there was no quorum at the meeting. There had also been the meeting of Fellows on Nov. 29, 1946, referred to by your correspondents. The Council agreed to this meeting being summoned before Nov. 30 "for the exchange of views," in response to an urgent request at the Annual Meeting of Fellows and Members on Nov. 13, at which again there was no quorum. It was made clear that resolutions would not be in order since the statutory notice could not be given. The general opinion of the meeting was, however, expressed in a recommendation that the College should act in conformity with the general feelings of the profession in regard to the question of negotiating on the Regulations of the Act. The Council held the view that negotiations should take place, but, when the majority of the profession favoured the opposite course, acted as requested.

Three resolutions were passed at the meeting on April 28 this year. They were as usual submitted to the Council for consideration and such action as they might think desirable. The first resolution, which was passed *nem. con.*, urged the Council that opinions expressed at the meeting be represented to the Minister of Health. This was done. The terms of the other two resolutions, which were passed by 153 to 73 and 67 to 58, were taken as representing the views of the meeting. The Council were opposed to the resolutions but in accordance with usual practice the Members did not vote. The resolutions were sent not only to the Minister (who personally acknowledged them) but also to the Negotiating Committee, through which body the Council has acted in representing views to the Government. It can hardly be maintained, therefore, that opinion has been suppressed.

Meetings at the College are not public meetings, and representatives of the Press, either lay or medical, are not invited as a rule, though the Annual Meeting of Fellows and Members is sometimes attended by representatives of the medical press. College meetings are held for the receipt of Council Reports and for the purpose of enabling those present to put their views before the Council. Resolutions which are passed are reported to the Council, which is responsible for the government and management of the College and is representative of the Fellows as a whole, not only those who may happen to attend any particular meeting. It is usual for proceedings at collegiate meetings to be confidential. On occasion resolutions may be issued for publication by a College, but the proceedings of meetings are not usually open to the Press, either medical or lay. The By-laws and Regulations of the College of Surgeons are strictly drawn in regard to the management of meetings, with a view to preventing them from being used as a means of publicity or an opportunity for propaganda.

During the discussions on the National Health Service Bill before enactment many resolutions were passed at meetings of Fellows and of Fellows and Members. These were dealt with in exactly the same way as the later ones and were sent by the Council to the Negotiating Committee, and sometimes to the Minister of Health, without any publicity being given to them and without any complaint being made on that account.

Fellows of the College are quite at liberty to express and publish any views they may hold, but those attending a meeting at the College are not entitled to speak for the College as a whole. The Council is charged with that duty, and also with taking such action on the views expressed at meetings as they may think fit. Pronouncements by the President have been made with the approval of the Council, the body which has full responsibility and can be regarded as representative of the Fellows as a whole.

The Royal College of Surgeons is an academic body and was founded, and granted powers and privileges, in order "to promote and encourage the study and practice of surgery." It fulfils these functions by maintaining high standards of examination for its diplomas, and by using its unique facilities for research and postgraduate education to the fullest possible extent. These are the true functions of the College, and its constitution is designed for their fulfilment. I quite agree that the College is not so constituted as to be an adequate body for day to day medico-political negotiations, and the Council has repeatedly expressed this view.

Finally, I hope that the signatories of the letter in your columns will cease trying to use the College as a public platform for political purposes, and will join with the Council and the majority of Fellows in supporting the College, interesting themselves in its activities, and doing their best to carry it forward to an even greater position in the world of surgery than it has occupied in the past.—I am, etc.,

WEBB-JOHNSON,
President, Royal College of Surgeons.

London, W.C.2.

Royal Colleges' Action

SIR,—Mr. G. A. Bagot Walters (June 5, p. 1105) deplores the attitude of the Presidents of the Royal Colleges "in failing to learn from the unhappy results of their previous intervention." But the question naturally arises as to whether the Presidents do in fact regard these results as "unhappy" or rather as the successful result of their deliberate intention. In the leading article entitled "Mr. Bevan's Gesture" (April 17, p. 737) we see the hope again expressed "that the Colleges will discover what are the views of their Fellows and take steps to make them public."

Without discussing the views of the Colleges of Physicians or of Gynaecologists, it is only fair to the Fellows of the Royal College of Surgeons, as distinct from the President or Council, that such a statement as, "It does seem important to take steps to prevent further interference by the Royal Colleges," should be further amplified, and this seems even more urgent when similar remarks appear in the lay press. For instance, in the *Sunday Express* of June 13 it is stated, "Some months ago I wrote that the doctors would lose their battle with Mr. Bevan. How did I know? Because there were powerful forces at work undermining the resistance of the B.M.A. The Royal College of Surgeons was one of those powerful forces."

The Council of the Royal College of Surgeons are elected by the Fellows, and the President by the Council. Beyond voting for the members of the Council at intervals the Fellows are debarred by the constitution from taking any other active part in the government of the College or in the election of the President. Up till now no question has been raised as to the authority of the Council in acting as an autocratic governing body in all matters in connexion with the College and with the profession of surgery, but when the President or the Council feel it incumbent on themselves to take an active part in political matters affecting the general public and the profession as a whole in the name of the Royal College of Surgeons it should clearly be stated that they do so as individuals and that in a moral sense they have no mandate from the Fellows until they have ascertained the opinion of the Fellows themselves and secured such a mandate by a majority vote. These political issues are not matters of college administration or exclusively concerned with the profession of surgery, but they have become matters of principle and moral issues to many people.

In November, 1946, a public meeting of Fellows was held at the Royal College of Surgeons and views strongly antagonistic to the proposed N.H.S. were expressed. Requests for a vote on various motions were denied on constitutional grounds. After considerable effort on the part of some of the Fellows a further meeting was held on April 28, 1948, this time in private. This meeting coincided with the closing date of the second plebiscite and was at a

later hour. The plebiscite, which had been rushed on the profession with unseemly haste, could not therefore have been influenced by the opinions expressed by the Fellows.

The impression created by this and other things can only suggest that the President and Council of the College, and probably some of the leading politicians in the B.M.A., were particularly anxious that the Fellows of the College should be denied the opportunity of expressing their opinion, as a public body, on the National Health Service at a time when an adverse vote would have any effect.

A cloud of secrecy still shrouds the outcome of the proceedings as far as the public and the medical profession are concerned, and so far the President and Council have maintained a discreet silence as to what are the views of their Fellows. It is not for me to discuss the findings of this private meeting, though others may well see fit to do so. However, as one of the Fellows I consider that the implication of dishonourable collaboration contained in such a statement as "powerful forces undermining the resistance of the B.M.A." is an insult to the College and calls for an authoritative statement as to what are the views of the College as a whole as distinct from those of individuals, whatever their eminence.

It might also be appropriate respectfully to remind the President and members of the Council that as Fellows we have shown our confidence in every one of them as individuals at the time of their election to their high office.—I am, etc.,

London, W.1. JOHN C. NICHOLSON.

Clinical Records

SIR,—The subject of clinical records is not new, and it is probable that notes on individual patients have been kept since medical practice first started. The present conception of keeping notes on a great number of patients, with the idea of obtaining statistical evidence which may be of real value for the advancement of medicine, is more modern. In the carrying out of this project a large team of people must take part. At the head are the statisticians. They sit and consider the figures that are served up to them. It is not their business to consider from where the figures come, and they must assume that they are accurate. Next below them are the people who make out number codes of the information supplied from the various hospitals, and, after passing these code cards through a machine, hand on the results to the statisticians. The information sent to the code makers comes from the record departments of hospitals. How many members of the staff of hospitals take an interest in the record department of their own hospital? How many have even visited it? If they did, the problems of the departments would diminish in proportion. It is probably true that a good clinician always thinks in terms of the patient in front of him, and the idea of recording certain details which do not affect the individual patient is distasteful to him; and in any case he feels that he is far too busy and overworked to do it himself, and therefore leaves the subject of records to his registrar or house-surgeon or house-physician. This is the really weak part of the whole statistical organization. However conscientious the registrar may be—and quite a number of such posts are filled by people who look upon them merely as stepping-stones—he has not the knowledge to fill in the records properly.

The next stage is in the records department. Here most of the members are well trained to pick out the facts needed for statistics; but, alas, when they go through the record case sheets how many of the facts are there? The incomplete case record is then sent with a tactful note to the registrar, who calls upon his memory and sometimes his imagination concerning a patient seen days or weeks previously. When a great many record case sheets have to be referred to the same registrar it must be a great temptation to the records clerk to fill in the probable answer and thus to diminish the pile of records referred back. It will seem, therefore, that the highly trained statistician may be spending much of his time on figures which are not worth the paper on which they are written. The strength of a chain is its weakest link. How then can the weak link in this very important organization be made equal to the other links?

The ideal way is for every clinician to be "shadowed" by a stenographer trained to know the facts that it is necessary to record. Failing that, case sheets with printed headings should be provided. These headings will suggest the facts required for recording, including in the case of cancer the points set out on the Ministry of Health cancer cards. In these days, when a patient is often treated in more than one hospital—e.g., radiotherapy following surgery—it is of the greatest help to all concerned if a copy of such case sheets is sent to the second institution, together with a "section" from the tumour.

The writer has often heard such a suggestion for case sheets with headings pooh-poohed, and a request made for a blank sheet of paper. Alas, too often such a sheet remains blank and suggests a blank mind. Much can be done by giving each new house-man a book of rules for record keeping. The importance of accurate clinical records cannot be over-stressed, as this is one of the main tools for the advancement of clinical medicine. It has been suggested that some central statistical auditors' bureau should be set up which would, on request, audit the figures and methods of collecting data in an institution. Such a counter-signature would do much to improve the value of clinical statistics.

The subject of medical statistics is becoming of greater and greater importance, but it is doubtful if the present general organization is sufficient to collect figures on a national basis. Surely it will be necessary for every Regional Board to set up a regional bureau of statistics which will be responsible for the medical statistics of its area.—I am, etc.,

London, W.1. MALCOLM DONALDSON.

Remuneration of Teachers

SIR,—The Spens Report makes interesting reading to those of us who are concerned about the future of the basic medical services—subjects like physiology, anatomy, or biochemistry. I will deal specifically with physiology, about which I know most.

In the new dispensation the budding young specialist in his second year after registration will be paid £600 per annum; if he were to join the staff of a physiology department at this stage he would be lucky and exceptional to get £500. The specialist rises by annual increments of £100 to £1,200; the physiologist might rise by £50 annually and certainly not rise automatically above £800, which is the initial salary of a reader in the University of London. The qualifications demanded of a reader are exacting. He must satisfy external experts about his standing in his profession, his ability as a teacher, and his contributions to research. No man would be appointed as a reader unless he was good enough to be considered a "possible" for a professorship.

The reader's salary might rise by £50 increments to a maximum of £1,200, which our future specialist has reached five years after registration. At 32, on being appointed to a hospital staff, the specialist is mature and starts at £1,500, the minimum (and often the initial) salary of a professor in the University of London. The specialist rises by eight automatic annual increments of £125 to £2,500; the professor may or may not receive any increment at the discretion of his school. There must be few physiologists in medical schools, whatever their age or standing, who are receiving £2,000.

In making the comparison between specialist and professor we must remember that the specialists will number many thousands and constitute a considerable fraction of the profession; we must not think of specialists in terms of the élite in the teaching hospitals and the best type of county hospital. Perhaps 10% or more of the annual student intake will become specialists; hitherto it has been thought that budding professors were rarer birds. At 40 years of age, earning £2,500, the specialist becomes eligible for the "glittering prizes" of an extra £500, £1,500, or £2,500 annually which are offered to make him give of his best; the professors are not in the Health Service and so presumably (and perhaps fortunately) are not in the running for what will be rather invidious distinction.

Two marginal comments are necessary: the physiologist's salary at all stages will be worth 10% more than its nominal value because of superannuation allowances; but the specialist is to get an expense allowance (free of income tax) for a car or other means of travel, costs of books, journals, society subscriptions, and expenses of attending conferences at home and abroad and of entertaining visiting colleagues. The physiologist incurs most of these expenses (or would if he could afford them) and gets no expense allowance or tax rebate.

The question then arises, who is going to become the physiologist or anatomist and the like of the future? They will fall into several categories: (1) Those who are too stupid or temperamentally or physically unfit to practise medicine; (2) those who are so passionately interested in the subject that they will ignore material considerations. Experience shows that, though young men often have a transient idealistic attitude, their fiancées or wives never have. The basic medical sciences will not be able in the future to draw on their share of the ablest medical graduates as in the past. Appointments will be filled by non-medical science graduates (as is already becoming common) and by less than first-class medical men; teaching and research in vital subjects will thus suffer. I have read many persuasive reports about medical education, but they generally overlook the essential point, that if you have first-class students and first-class teachers the rest matters very little. We are getting to-day the pick of the young people of this country as students, but the standard of preclinical teachers must inevitably fall.

Some of us believe that the years when a man studies anatomy, physiology, and biochemistry are the years that have the greatest influence on his future development as a serious thinker and investigator. If we are to have specialists worthy of the salary scales recommended in the Spens Report they must spend their most formative years in the company of the best scientific minds we have and not the second-best. The future conditions of service in all the teaching departments in our medical schools need reconsideration, urgently, now.—I am, etc.,

London, W.1. SAMSON WRIGHT.

Remuneration of Specialists

SIR,—While many will regard the Spens Committee's views on the remuneration of specialists as fair and equitable, there are several points which call for comments if criticism is allowed at this late stage.

Paragraph 13 reads: "We are satisfied that there is far greater diversity of ability and effort among specialists than admits of remuneration by some simple scale applicable to all." It is difficult to bring this into line with paragraph 10, which stresses the equality in status between the various branches of specialist practice and equality of status between teaching and non-teaching hospitals, and with paragraph 8, which states that "the status of the area hospital centre should be in no way inferior to that of the teaching hospital, and that both should be able to attract specialists of the highest calibre."

The Committee's opinion is that "if the profession is to be satisfied and recruitment maintained it is essential that a method of differentiation involving the selection of individuals for exceptional reward, in respect of outstanding ability, must command the confidence of the profession." It should be emphasized that the overwhelming majority of the specialists in the profession are definitely not in agreement with this suggestion. Those who have hitherto achieved exceptional remuneration in consulting practice know full well that such success is only achieved by hard work, efficiency, experience, and skill. There is no doubt at all that those who have achieved outstanding success in consulting practice in the past have earned and deserved their success and have contributed, in an unusual degree, service to the public whom they serve. And let it be said here that there can be no more shrewd judge of a consultant than the fellow practitioner who calls him in.

Specialists take a grave view of the idea that qualities of "outstanding distinction" should be assessed by any national tribunal. All sorts of anomalies and abuses would arise. Space would not permit discussion of these in detail. One effect would probably be that those engaged wholly in hospital work, which is more "in the public eye," would be selected in preference to those whose skill is apparent in the confidential channels of private practice. What qualities would be held to constitute outstanding ability? To some, teaching ability, skill at research, ability to write, and after-dinner eloquence spring readily to mind. But those acquisitions have always brought their indirect rewards and there is no reason why such a state of affairs should not continue. How can it sensibly be expected that a national committee, however constituted, could operate in such a way as to assess the merits of all consultants throughout the country without the most unfair and invidious distinctions creeping in? It would be preferable that, as in the Services, seniority should be the determining factor in advancement, assuming, as the report suggests, that only specialists of the highest calibre should be encouraged.

Specialists view with some dismay the recommendation of this committee, partly sponsored by the B.M.A., that the national committee to be set up to select individual specialists for additional rewards should be composed of members nominated by the Royal Colleges and Scottish Royal Corporations. The Royal College of Physicians, as Lord Dawson pointed out, was never founded for the purpose of exercising control over medical practice. Such a new departure from its traditional function would constitute a most retrograde step, not only in the history of the College but in the profession as a whole. Quite apart from the powers and functions of the Royal Colleges and Scottish Corporations, how about all those specialists, many at the peak of eminence, whose names are not on the rolls of the Colleges at all? I feel sure that the majority of specialists will agree with my view that the B.M.A. is the only body in any sense representative of the profession as a whole and the only one qualified to nominate the members of such a national committee.—I am, etc.,

Windsor. P. H. WILLCOX.

Payment of Part-time Consultants

SIR,—The suggested method of payment in the Health Scheme for part-time consultants appears to be unfair in certain respects. In particular it will prove unsatisfactory to physicians. The part-time consultant "will be able to devote the remainder of his time to private specialist work outside the scheme," but in the case of the physician in the smaller provincial centres, where by far the greater part of his income is derived from domiciliary consultations, this possibility will be removed.

While he will be allowed only 25 of these in a quarter to be paid for under the scheme, it is difficult to see how he can have any outside the scheme. When every patient can have a consultant when required, whether he is a public or private patient of his general practitioner, there can be no private domiciliary consultations. A physician has few opportunities of making use of pay-beds or nursing-homes, for most medical cases of this class are nursed at home, and unlike the surgeon he will not benefit from those who wish for the comfort of such accommodation. In other words, while the physician is only offered part-time work, practically all means of earning anything outside the scheme will be taken from him.

Again, in a district such as that served by the hospitals in this town, where about a quarter of a million people are spread over an area of perhaps three thousand square miles, a domiciliary consultation may be at a distance of 40 miles, while the majority are about 20 miles away. Two consultations over these distances can take the best part of a day and prove very tiring. Unless the mileage under the scheme takes into account the time taken we will feel very hardly used in being given the four-guinea fee for such work.—I am, etc.,

Shrewsbury. C. LAWSON STOTE.

Safeguards Not Secured

SIR,—In your footnote to my letter in the *Journal* of June 12 (p. 1158) you state that "the ample safeguards" for private practice have been secured. Few, if any, representatives are likely to agree with this statement, in that the financial administrative arrangements are such that patients and doctors remaining outside the Service are penalized. For example: (1) There are no grant-in-aid provisions. (2) Patients who elect to have medical advice privately are required to pay for drugs and appliances. (3) Patients in State-owned hospitals appear not to be allowed to have the advice of doctors who are outside the Service. (4) Doctors who remain outside the Service are unlikely to be able to recover the capital value of their goodwill. Such a state of affairs is not in accordance with the policy of the B.M.A. as directed by the Representative Body.—I am, etc.,

Dorking. CYRIL E. BEARE.

Remuneration in Rural Areas

SIR,—Dr. E. Roland Williams (June 19, p. 1208) states, "Fit country doctors in their fifties will turn from doctoring to farming." If Dr. Williams will agree with replacing "will" with "are," I will agree with him. At the moment the capitation fee for an insured patient is 15s. 6d. At the same time the subsidy payable annually on a hill-breeding sheep is 16s. From the patient there is no other return; from the sheep one expects to get a clip of wool and hopes to get a crop of lambs. I personally have about 1,600 of the former and about 600 of the latter. I may say that I would rather add to the latter than the former.—I am, etc.,

Yeadon, Leeds. J. E. OUTHWAITE.

SIR,—As a rural practitioner I should like to endorse all that Dr. E. Roland Williams (June 19, p. 1208) has said. Town doctors with large numbers may under conditions of sweated labour maintain their present incomes on the suggested inadequate capitation fee; country doctors, who mainly at present have small panels and good private practices, cannot hope to maintain anything like their present incomes, while, as Dr. Williams points out, both expenses and work will be greatly increased. The time is certainly ripe for rural practitioners to unite in some way to protect their interests and to see that they obtain at least the minimum suggested by the Spens Committee.—I am, etc.,

Ashford, Kent. W. F. HARVEY.

SIR,—It would appear that the case of practices in country towns and semi-rural areas has received little notoriety in the varied correspondence which has illuminated the columns of the *British Medical Journal* in recent months. This type of practice, usually based on a local hospital or cottage hospital, and in many cases deriving its main income from private work, which is faced with virtual extinction in the near future, would appear to have little prospect of supporting the existing number of doctors. This is due to the sparsity of the population and the consequent inability of the doctors to compete with their opposite numbers in the towns and industrial areas in obtaining their full quota of patients.

A high standard of medical service has been maintained in the past for both insured and private patients, hospital waiting-lists are almost unknown, and the practitioners concerned have been accustomed to undertake work of a character not regarded as being within the scope of a general practitioner under the N.H.S. It seems, to say the least, uneconomic to relegate these experienced doctors to the lower income groups because of their geographical misfortune, or, by applying the principle of negative direction, to reduce their numbers, as this would appear to be the only solution to the financial difficulties confronting them. Needless to say, such reduction in numbers would detract from the quality of the service to the patient, would help to swell the hospital waiting-lists, and in every way produce a feeling of dissatisfaction in all concerned, at the same time reducing to a state of penury and despair those unfortunates who are compelled to direct themselves elsewhere in search of a living. This section of the medical profession is surely large enough to voice its opinion and see that it obtains a square deal when the details of remuneration are discussed.—I am, etc.,

L. R. ROUTLEDGE,
Honorary Secretary, Hexham Division.

Scheme for Time Off

SIR,—Is it not about time we did something ourselves about having deputies when we are on holiday or ill and for night and week-end service? Here is a simple scheme which has worked well elsewhere. It is the same for holidays and illness.

Groups of five to nine neighbour practitioners are formed, preferably by the local panel committee. No one must be excluded. The work is paid on a 50–50 basis. Thus, if every participant is away at the same time, he takes out about as much as he has to pay. A card of postcard size gives on one side the names and addresses of the team and asks the patient to choose one of them to deputize for his doctor and to return to him when he comes back. He gets his card at the door of the absentee and hands it to the deputy. A placard at the door has the same text, and a box with cards is hung up there for the patient to take if the door is unattended. Overleaf are two lines of 31 little squares numbered 1–31 as in the diaries, with £ s. d. where the deputy fills in the name and address of the patient and marks each surgery attendance with a /; visit, X; night call, N. The rest of the space is for notes if required. A unit fee is fixed for the surgery attendance (1s. or 2s. or *ad lib.*), and X is 2 units, and N is 4. When the absentee returns the deputy adds up his notes and sends the cards within three days to the former, who pays 50% within one week. In the case of illness account is rendered and paid every fortnight.

Holidays are planned normally in April. Doctors without children at school should go during the terms. If no agreement can be reached, lots are drawn. The unlucky has the first choice next year. If groups of nine are formed it will be possible to send away two members at the same time. The "all for one" principle will create and improve relations between colleagues.

In the night service and week-end service one works for all. The groups are the same. No fee is paid, but cash receipts may be kept. Two placards are used: "*Night Calls this week Dr.* ....." and *Sunday Emergency Service this week. Dr.* ..... A slit is provided into which the name and address of the doctor on duty can be inserted. Night duty is from Monday 9 p.m. to 8 a.m. in the morning until Saturday morning. Week-end duty starts at 12 noon on Saturday and ends Monday morning 8 a.m.

This system works also in smaller towns and villages not too far distant. It should be inaugurated officially to overcome old dislikes and distrusts, and it should be put up at once. Locums will be increasingly difficult to get. One safeguard seems necessary to me: as the change of doctors can be made any day, no participant may accept a patient of an absentee before three weeks after his return, otherwise the scheme will be discredited.

This scheme is worth as much as those who work it. I have no doubt that it will prove satisfactory. I shall be pleased to give more explanations if required.—I am, etc.,

Southport, Lancs. ARNOLD E. HARVEY.

Chemists' Working Hours

SIR,—I have read references in your columns to chemists' closing hours and suggestions that these are too early. I can remember, in my apprentice days, some people finding 8.30 p.m. on week-days and 10 p.m. on Saturdays too early. I also recall complaints when chemists first claimed a half-holiday.

It is not unheard of for an odd member of the public to express disapproval at having to wait while a doctor finished a well-earned round of golf or returned from a social call. A doctor may take his leisure when he finds it most convenient, but legal requirements deny a chemist any choice in such matters. I may be particularly fortunate in dealing with doctors who are considerate enough to carry stocks of emergency drugs such as sulphonamides, etc., which simplifies matters for all three—patient, doctor, *and* chemist. I know too that I do my best, as do my assistants, to supply any urgent requirements irrespective of hours, day or night.

I find that, quite apart from statutory closing hours, there is legislation which puts definite limits on the number of working hours for assistants and the amount of *permitted* overtime. This, in justice to employees, is necessary. It is also one of the reasons why the multiple shops generally (in Scotland at least) have not so far given the half-day, public-holiday, and Sunday service which has been given by the private chemist.

One of your correspondents suggests that the B.M.A. complete their "good job of work" by going into this matter. I should like to point out that a rota service is part of the new Health Service, and will be dealt with by Executive Councils and local Pharmaceutical Committees, who will make *necessary* arrangements. The B.M.A. may be directly interested, and through its members have an opportunity to discuss the question of pharmacists' hours. It is definitely not a matter for the Association to include in their job of work.—I am, etc.,

Cupar-Fife. R. S. WHITELAW.

Structure of the B.M.A.

SIR,—While I sympathize with and indeed share in Dr. R. Hale-White's distress, I fear that his cry for unity (June 12, p. 1158) is whistling for a wind—the wind of which all that returns is the echo, "Too late." Eleven years ago at a special general meeting with all the emphasis and urgency

in my power I strove to awaken the Derby Division to a sense of the perpetual weakness of the B.M.A. inherent in the lack of integration between centre and periphery, the fruits of a long-standing distrust, by no means ill-founded on either side, between executive and rank and file. Dr. Charles Hill, who was then Assistant Secretary, attended the meeting, and with customary vigour did wash his hands in innocency, with the result that the motion was lost.

That doctors will not attend Divisional meetings or take an interest in its affairs, and cannot therefore be depended upon—here for ever lies the gravamen of head office's complaint. But surely, Sir, if the mountain will not go to Mahomet, Mahomet should go to the mountain. At about the same time as the meeting above referred to I advocated the appointment of whole-time regional or district secretaries. Though this has since become official policy, we still await its implementation.

It is a further and legitimate criticism that members of Council represent constituencies which are altogether too big. As many as three or four counties are combined together to return one member. In our case in Derbyshire the elected representative hails from Lincolnshire and is quite unknown to us. The choice may be excellent, but in such circumstances nomination and recommendation can only be based on past services to the B.M.A. such as the performance of a mass of gratuitous secretarial work, not necessarily or *per se* the best qualification for a good administrator.

Six years have passed in discussion of the National Health Service, and of these almost a whole twelve-months was spent in secretive and wholly futile talks with Ministry of Health officials contrary to the expressed will of the profession; and yet right up to the last there have been but small signs of a programme or evidence of preparedness. The result has been a stampede, almost a panic. Thus it was not until two months before the appointed day that the suggestion was made for the formation of small local groups—independence committees so called. Here at last was a measure which, if adopted years or even months ago, might have changed the whole situation. As it was it was stillborn, for before the committees had time to hold an initial meeting there came the third plebiscite and the debacle.

The blunders, strategic and tactical, at Headquarters have been deplorable and sometimes inexplicable, but that the will of the majority of the profession, as expressed in plebiscites on fundamental questions affecting the whole future of medicine, should twice have been overridden and set aside admits neither of excuse nor of continued confidence. B.M.A. House, though hardly a gem of architecture, is at least a workmanlike unimaginative one-brick-upon-another; the banner-hung great hall is imposing; and in the council chamber the visitor is feign to prostrate himself in the odour of wisdom. None the less, it is apparent that the B.M.A. needs shaking up—perhaps shaking is not the right word. For myself I shall not enter the Health Service, and I doubt whether I shall renew my subscription in January. Perhaps after this I shan't be asked to.—I am, etc.,

Wirksworth, Derby. E. D. BROSTER.

Analgesia in Midwifery

SIR,—A hundred years ago analgesia in childbirth was in its infancy. In Great Britain we have not progressed much beyond that stage. In theory 60% of women receive analgesia. This sounds a substantial figure, but there can be little doubt that the so-called analgesia is entirely inadequate and almost useless in many cases, and in any event the remaining 40% receive nothing to help them. This state contrasts sadly with other forms of anaesthesia, where a condition approaching perfection often obtains. This is not due so much to lack of suitable agents for use in midwifery: there are many excellent drugs which, used intelligently, are perfectly safe. The deficiency is due to lack of suitable administrators or lack of administrators with the necessary time.

An increasing number of midwives are receiving training in the use of nitrous-oxide analgesia, but there are difficulties to be overcome before the patient can receive adequate relief. The midwife is frequently beset with the troubles of organizing a thoroughly disorganized household. It is her responsibility to arrange the patient's room so that reasonably aseptic conditions are present. She usually has to see to the infant's clothing. She has to wash the patient. She often has to oversee the cooking arrangements. She has, in other words, a large number of duties, and one cannot be surprised that nitrous-oxide analgesia is sometimes left in the background, because the nurse does not have time to instruct the patient or change the cylinders or collect a new cylinder if required. The nitrous-oxide cylinders are a considerable weight, and are an added difficulty in the case of a midwife without a car. The midwife's patient is in many cases at a grave disadvantage in that such drugs as morphine or pethidine cannot be administered. Trichlorethylene is much superior to nitrous oxide in many ways. The midwife is debarred from using this, although employed with a suitable machine such as a Friedman's inhaler or modified Clover (previously described by the author) it is perfectly safe in normal circumstances.

It is contended that the existing conditions could be vastly improved by the organization of a suitable anaesthetic service, the main function of which would be to advise and assist the midwife in analgesia. The birth rate is at present approximately 20 to 24 per thousand; probably 15 of the 20 babies are delivered by midwives, so that in a population of 100,000 about 1,500 babies are born every year without a doctor's help. This is an average of about four cases a day.

It is suggested that, in an area with a population of roughly 100,000, two or three part-time practitioners with suitable qualifications and experience should be appointed regional anaesthetists. Several part-time practitioners are considered preferable to one full-time on the grounds that one practitioner might be required at several places at the same time. Off-duty times and holidays would be easier to arrange, and it is probable that the anaesthetist would be more efficient if he were undertaking hospital work in addition.

It would be the duty of the midwife in charge of the case to notify one of the anaesthetists as soon as the patient started labour. The practitioner would then visit the patient at her home or in the nursing-home and prescribe whatever drugs seemed necessary and instruct the patient in the use of nitrous oxide or other methods of analgesia. He would also check over the machine to ensure that it was in proper working order and supply additional nitrous-oxide cylinders if necessary, or whatever other agents were required. After instructing the patient the anaesthetist would visit her again if he thought it necessary or if requested by the midwife.

It is obvious that it would be impracticable for the practitioner to be present throughout the confinement, but in addition to the above duties he should be available to administer anaesthesia for instrumental delivery or for other obstetrical operations such as perineal repair or caesarean section, whether these procedures are carried out by local practitioner obstetricians or by consultants in midwifery.

The method of payment is an important consideration, and it is thought that a small salary plus an amount for each visit to the patient would prove most satisfactory. It is believed that such a method would prove better than a fixed salary.—I am, etc.,

Johannesburg. D. C. DEVITT.

Pain in Childbirth

SIR,—Dr. J. A. Hadfield's suggestion (June 12, p. 1155) that pain is the stimulus of the maternal instinct is at variance with so many facts that I feel compelled to point out that his own illustration is logically faulty. An anaesthetic abolishes consciousness as well as pain, and in the case of a non-human mother surely the absence of knowledge that she has produced the offspring might be the cause of her failing to acknowledge it as hers. In the human mother the case is quite different. Apart from the established cases, especially in primitive races, but numerously too in civilization, of mothers who produce children painlessly and yet by every indication love them passionately, there have been thousands of anaesthetized mothers who love their children dearly. And what about adopted children? Every doctor must know of women who say they love their adopted children as well as their own, and though this is not always the case the reasons are easily understood; but where there are no other children the adopted child is often loved with the greatest maternal passion. I would say that whatever may be true of the unselfconscious lower creatures, the argument is not applicable to the selfconscious human being. Hasn't Dr. Hadfield read anything about Dr. Grantly Dick Read's cases?—I am, etc.,

Liverpool, 22. F. R. CRADDOCK.

Rectal and Vaginal Temperatures

SIR,—The recent interesting correspondence on vaginal and other temperatures in the *Journal* calls for further data. As I have some, I submit the following résumé.

In 1934 I read a paper at the British Association in Aberdeen, dealing with the significance of diurnal variations of vaginal temperature. At that time we could find no previous records. Dr. Havelock Ellis wrote to me about my then current research: "You raise an interesting question about the temperature of the os uteri, which I have never thought about, and I am sorry to say know nothing about. I cannot recall having come across it among the books I have by me."

The making of observations originated with my testing the efficacy of greasy soluble suppositories. At my Mothers' Clinic I had had recorded the daytime temperatures of the cervical region in over 100 normal women and found that they were higher than anticipated. This led me to make a more searching examination of some selected cases, such as women doctors and midwife nurses, who could manipulate a thermometer in their own vaginas with sufficient care. Thereafter I had simultaneous readings made of all the three loci—mouth, rectum, and the cervical end of the vagina. Each set of the three thermometers used to take readings were of identical make, carefully checked in air temperatures, and all were left in place for ten minutes for each reading. Though they were "half-minute" thermometers, I found that the readings were not entirely reliable until each had been in for ten minutes. A number of records were made per woman at 6 a.m., 12 noon, and 10 p.m. An average chart of the kind is shown in Fig. 1 (. . . .=oral, ——=rectal, - - - -=vaginal temperature).

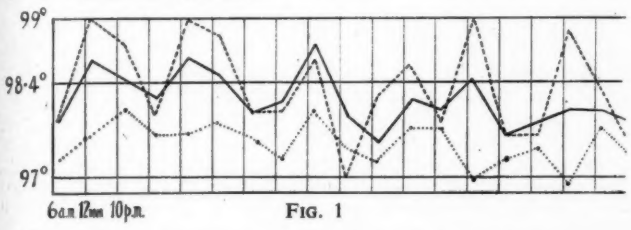


FIG. 1

It will be seen that the general relation of the rectal temperature to that of the vagina is different from what is now currently supposed, and that, though the rectal temperature is higher than the vaginal early in the day before exercise has been taken, it is markedly lower at midday, when the cervical temperature reached its peak. In addition to these, I made very special readings for a few days, in one case, of six sets of three simultaneous readings in each 24 hours, waking the subject by alarm clock, so that the readings were at 2 a.m., 4 a.m., 6 a.m., 12 noon, 6 p.m., and 10 p.m. The burden on the experimental subject was so great that this chart (Fig. 2) is the only one, and

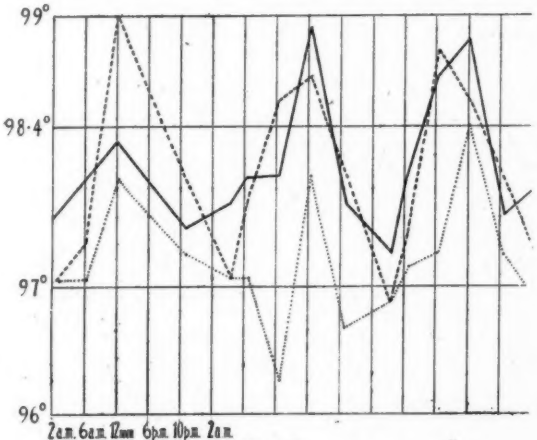


FIG. 2

is of special interest. In it the oral temperature is of course always well below all the others, but both the rectal and vaginal temperatures show curves more complicated than where the readings were three in 24 hours.

Though some charts were shown in Aberdeen in 1934, these original records have never been published, and so have not hitherto been available to those now interesting themselves in the questions of rectal and other temperatures.—I am, etc.,

London, W.1. MARIE C. STOPES.

Harrison's Grooves

SIR,—Drs. J. Naish and H. R. E. Wallis (March 20, p. 541) deserve congratulations for their lead in debunking the long-entertained ideas about the causation of Harrison's grooves. As a teacher I was always dissatisfied with the aetiological explanation given in the textbooks about Harrison's grooves and was collecting clinical evidence to disprove the "rickety" hypothesis of the grooves when it was a pleasure to come across the article by the above doctors in the *Journal*.

One thing definitely emerges from my observations, and it is that Harrison's grooves are not limited only to the condition of rickets. They appear in a number of heterogeneous conditions which produce debility and muscular asthenia in the child—as in prolonged illness, protracted convalescence after acute diseases, chronic malnutrition, chronic respiratory infections, chronic anoxic conditions, etc. The essential factor in the production of the grooves is muscular weakness. This in turn causes the kyphotic posture in the sitting child and the "pot belly" or protuberant abdomen. I fully agree with Dr. R. Good (April 10, p. 707) that distension of the abdomen is also an important contributing factor, but I do not believe with him that frequent distension of the abdomen after hearty feeding is one of the causative factors. If it were as Dr. Good writes, then the incidence of Harrison's grooves would be much greater, and would be taken as physiological rather than pathological. For, if we remember right, all of us have taken frequent and hearty feeds in our days.

I believe that the laxity of the abdominal musculature and kyphotic sitting posture, with or without enlargement of liver and spleen, are the important causes of abdominal distension. In the kyphotic sitting posture with abdominal distension the lower ribs can be actually seen splaying out with the costal border everted, producing horizontal grooves above on both sides. As days pass by, the ribs become fixed in the new position, thus perpetuating the grooves. In rickets the grooves are particularly common and pathognomonic of the condition because all the causative factors are present.

It will be of interest in this connexion to note that in India in persons of a particular community who often have huge obese abdomens due to affluence, and asthenic musculature due to lack of exercise and sedentary habits, horizontal grooves on the lower part of the costal cage are visible which closely simulate the Harrison's grooves in the child. Thus, I strongly believe that the aetiology of Harrison's grooves lies not in rickets as such but in the lax and asthenic musculature, kyphotic sitting posture, and pot belly or protuberant abdomen.—I am, etc.,

Poona, India. P. L. DESHMUKH.

Pain in Phantom Limbs

SIR,—I have been much interested in the recent correspondence in the *Journal* on "Pain in Phantom Limbs" and in the various views that have been expressed, for when in charge of amputation cases in the Indian Army from 1944 to 1946 I had the opportunity of observing many patients with phantom pain. With Dr. J. Donaldson Craig's views (May 8, p. 904) I am in almost complete agreement. I would, however, point out that operations on amputation stumps, such as neurectomy or reamputation, do not always fail to relieve phantom pain. In some cases, especially those with obvious stump defects, the result of such operations can be most gratifying.

Like Dr. Craig and others[1,2] I have found that satisfactory relief of phantom pain (and of stump tenderness) can be obtained in many cases by interruption of the sympathetic chain, though I have found operative sympathectomy to be more satisfactory in most cases than repeated procaine injections. The effect of a procaine injection should of course always be observed first. In a series of 16 cases of post-amputation pain and tenderness I found that interrupting the sympathetic chain produced complete or very satisfactory relief in 9 (56%).

I have found, as has Dr. Craig, that cases that are not benefited by interruption of the sympathetic chain can sometimes be relieved for prolonged periods by repeated procaine injections into nerve trunks, and occasionally even by a single injection. Such a result, however, is not usual, and I agree with Mr. Leon Gillis (June 5, p. 1108) that in the majority of such cases only very temporary relief of pain is produced, even by repeated injections. A method I have sometimes employed with occasional success for lower-limb

amputation pain is repeated spinal analgesia, this being simpler to carry out than an effective block of the sciatic nerve. I do not consider that injection of local analgesic drugs often produces permanent relief, but relief for several months, which occasionally occurs, is better than no relief at all, and the injections can be repeated.

Chordotomy I found to be disappointing in the two patients on whom I employed it, though in one of them considerable improvement was produced; and before chordotomy is considered in patients in whom sympathetic block has failed I would suggest that procaine injections into nerve trunks or spinal analgesia should always be given a trial.

I agree with Dr. Craig and disagree with Mr. Gillis about the relationship of phantom pain to causalgia following peripheral nerve injuries. The character of the pain and its frequent aggravation by emotional disturbances and temperature changes, and in the lower limb by defaecation and micturition, are strikingly similar in both conditions. With complete nerve section, too, the pain that sometimes develops is identical with causalgic pain following incomplete nerve lesions, though the peripheral changes, such as increased sweating, cyanosis, and hyperalgesia, do not of course occur. These patients are in exactly the same condition as patients with amputations except that the hand or foot has not been amputated. And, moreover, if amputation is performed in patients with causalgia the pain often continues as before, though now felt as phantom pain.[3 4]

The hyperalgesia found in the hand and foot in patients with classical causalgia is, of course, absent in patients with phantom pain after amputation, but I would like to point out that the hyperalgesia sometimes found in amputation stumps presents exactly the same features and to suggest that the mechanism of production is essentially the same. It is customary to regard tender hyperalgesic stumps as a condition quite separate and distinct from phantom pain, but in my experience almost all patients with hyperalgesic stumps have phantom pain, though, as pointed out by both Mr. Gillis and Dr. Craig, patients are often so afraid of their sanity being doubted if they talk of their phantom pain that they frequently complain only of the tender stump. It is not very uncommon for a patient with a tender stump to mention that he also feels pain in the absent hand or foot only after he has been under one's care for a considerable time and after he has learned that his complaints will not be scoffed at. Mr. Gillis's statement that following finger amputations causalgic pains are frequent but phantom pains rare is, I believe, to be explained in this way: I have had some patients who, in addition to pain and tenderness about the amputation scar, experienced pain that was felt to be in the amputated finger, and it is probable that many others have similar pain but do not mention it.

A further point of similarity between the two conditions is their response to sympathectomy. I have found that, as with phantom pain, sympathectomy relieves causalgic pain after nerve injuries in many cases, but not in all. This would seem to be the experience of most British surgeons who have dealt with these cases.

Not the least interesting aspect of this subject is the number and variety of the views that have been put forward in an effort to explain the many puzzling observations that have been made. Most of these views, including those put forward by Mr. Gillis and Dr. Hugh. H. Carleton (May 29, p. 1052), have not been supported by any convincing evidence. Investigations that I carried out on a number of patients provided evidence in favour of quite a different view.[5] Incidentally, the findings in patients with phantom pain and in patients with causalgic states after peripheral nerve injuries were exactly comparable, and thus support the view that these conditions have a similar aetiological basis.—I am, etc.,

Belfast. J. A. W. BINGHAM.

REFERENCES

1 Livingston, W. K. (1942). *Pain Mechanisms*, New York, Macmillan.
2 White, J. C. (1944). *J. Amer. med. Ass.*, **124**, 1030.
3 Riddoch, G. (1941). *Brain*, **64**, 197.
4 Lériche, R. (1939). *The Surgery of Pain*, London, Baillière, Tindall and Cox.
5 Bingham, J. A. W. (1948). *British Medical Journal* (in press).

Diagnosis of Gonorrhoea

SIR,—Dr. F. J. T. Bowie (May 29, p. 1030) does not say what he regards as "reasonably adequate measures" of identifying the gonococcus. Is he satisfied with the demonstration of the germ in a Gram-stained smear, or does he require proof by its isolation in pure culture and confirmation by the appropriate sugar tests?

My practice in the Army is to treat for gonorrhoea after I have taken an exhaustive history and found a typical discharge in which I have identified presumptively the gonococci by their staining reactions and their shape in or around the leucocytes. If the history, the discharge, or the smear is not typical, I send the man for culture of his discharge before starting treatment. In marital cases I make it clear to the man that success in culturing the gonococcus from his discharge will be more cogent evidence against him in a court of law, and that he has the right to refuse this test if he does not wish scientifically to incriminate himself.

I disagree that a "delay of a day or so while awaiting a laboratory report on a sample of pus is of little significance." Although I have not yet classified my results, I am forming the impression that acute gonorrhoea treated within 48 hours of the appearance of the discharge by 250,000 units of penicillin is far more likely to settle down without the continuing of the discharge than when treatment is started on the third day. These cases seem more apt to develop a persistent posterior urethritis or a prostato-urethritis. I have repeatedly found that men coming for treatment after the third or fourth day of the clap, when there is an early secondary infection, do not pass the final test of cure at the end of the third month and on some occasions have been returned to the S.T.C. long before this by their M.O. for further treatment.—I am, etc.,

G. S. ANDREW,
Captain, R.A.M.C.,
Colchester. Venereologist to East Anglia District.

Symmetrical Gangrene in an African

SIR,—The following case of symmetrical gangrene in an African, though it does not add anything to the aetiology of the disease, is of interest in that it presents many similarities to those described by Dr. Michael Gelfand (June 14, 1947, p. 847) and Dr. J. G. Salter (July 19, 1947, p. 108).

A northern Sudanese aged about 35, a sailor on one of the Nile steamers, was admitted to Malakal hospital on April 16, 1948, complaining of fever. His general condition was good; he was not unduly undernourished. Blood slides for the first four days were negative for malaria, but as his spleen was just palpable, and malaria is very common among these sailors, he was given three tablets of paludrine in a single dose on admission. At the time we were trying out this single-dose therapy for malaria. He had no other antimalarial drugs at all.

The fever did not react to this treatment and continued to vary from 100° F. (37.8° C.) to 103° F. (39.4° C.) for over a week, after which it settled slowly. A white cell count taken on April 20 showed 5,150 cells per c.mm. The Widal and blood-culture tests were negative for typhoid, paratyphoid, and mellitensis infections. There was no oedema of the feet at any time. Heart and lungs were normal. No helminthic infections were found in faeces or urine. On admission the urine was acid and clear, but on April 19 it was alkaline and had a trace of albumin. No sugar was found in the urine at any time. B.P. 130/90.

On April 24, eight days after admission and ten days from the first symptoms, the patient complained of inability to use his right leg. The limb was cold and resembled a spastic paralysis with loss of pain below the knee, but no reflexes could be elicited at all. On April 25 there was evidence of gangrene with a line of demarcation about one-third up the leg. On April 26 the line of demarcation had reached the heads of the tibia and fibula. It proceeded no further. Postural treatment with warmth was given and the condition eased somewhat. There was a return of warmth and feeling for a short period to the upper part of the leg, but this again went off after 24 hours. On April 28 a total blood count was as follows. Red cells 3,090,000; white cells 2,200 per c.mm. and haemoglobin 67%.

By May 1 the condition was stationary, the temperature slightly above normal, but the general condition of the patient worsened. He lost weight, lost interest in his surroundings. On May 3 gangrene developed suddenly in the left leg, went through the same stages as in the first except that the process was much more rapid and complete within 24 hours. The line of demarcation in the left leg was almost exactly identical with that in the right. The patient died quite suddenly on May 4, 1948.

The condition would appear to resemble that described by Gelfand except that there was no oedema. The patient being a Moslem, a necropsy was denied us. He had no obvious signs of deficiency disease such as pellagra.

I am indebted to Dr. E. P. Pratt, Director S.M.S., for permission to publish this case report, and to Dr. R. Kirk, F.R.S.E., for advice and interest.

—I am, etc.,

J. F. E. BLOSS,
Sudan Medical Service, Malakal. Province Medical Inspector.

"Hypercholesteraemia"

SIR,—The interesting memorandum by Drs. E. Sherwood Jones and P. W. Robertson (June 12, p. 1137) contains in its title a truncated word which demands consideration. The condition they describe as hypercholesteraemia is one with an excess of a certain sterol in the blood, whereas the contracted form of the word suggests an excess of an ester. It is rare in these days to find anyone (*pace* Gowers) who shortens, and it is one of the few pleasures of this peace that "triphibious" has died the death it deserved. If then we propose to shorten hypercholesterolaemia, let us either drop the "hyper" and accept a convention that cholesterolaemia signifies an excess, or drop the "chole" and by writing hypersterolaemia admit that we do not in fact know whether other sterols (pron. *steerols*) take part in the increase. It would work for accuracy if we pronounced cholesterol in such a way that the sound showed the relationship to cholecystitis or cholelithiasis, and that the substance spoken of is indeed a sterol.—I am, etc.,

Dundee. A. C. LENDRUM.

New Conception of Angina Pectoris

SIR,—With reference to Dr. Neil Gordon's letter (June 19, p. 1205) I should like to point out that there is experimental and clinical precedent for relief of pain associated with vasodilatation by a further dose of a vasodilator. In the original work on the histamine headache (Pickering, G. W., *British Medical Journal*, 1939, **1**, 907; Wolff, H. G., *et al., Arch. Neurol. Psychiat.*, 1936, **35**, 1054; ibid., 1938, **39**, 737; ibid., 1943, **49**, 323) it was discovered that a further dose of histamine relieved the headache. From the clinical side, amyl nitrite has been used with success for the relief of the headache of migraine. Thus the fact that amyl nitrite, a vasodilator, will relieve the pain of angina pectoris does not detract from Dr. Wyburn-Mason's theory.

There is however one difficulty. Can an artery resembling the stem of a clay pipe dilate sufficiently to cause pain?—I am, etc.,

London W.5. MICHAEL D. WARREN.

Medico-legal Literature

SIR,—In the *Journal* of April 24 (p. 798) you published a paper by Mr. W. R. Le Fanu, Librarian of the Royal College of Surgeons, on British medical libraries, in which he commented on the lack of an authoritative collection of medico-legal literature. On June 17 the London Group of the University and Research Section of the Library Association held a meeting on the law libraries of London, at which this point was raised, and it became clear that there is no such collection among the law libraries either.

Mr. K. Howard Drake, secretary-librarian of the newly opened Institute of Advanced Legal Studies, in speaking about his library policy, explained that he had been surveying the resources of law libraries in London to see, among other things, how far he could try to fill existing gaps. He received the suggestion about a medico-legal collection sympathetically, without, of course, committing himself at this stage.

It seems to me that, now that the matter has been raised in this way, medical and legal librarians in London should meet together to work out a co-ordinated policy on this subject, which is of equal interest to both sides.—I am, etc.,

London, W.C.1. REGINALD J. HOY.

Medical Photography

SIR,—Very much against my wish Dr. James F. Brailsford forces me to answer his letters (May 1, p. 855, and June 19, p. 1204). His first comment on the growth of the photographic department of the Birmingham Accident Hospital—"What a magnificent increase! For what?"—would surely have been more constructively made had he visited the department and examined its work at first hand. The work of the department has grown with the volume of patients treated by the hospital. Photographic records of injuries are confined to less than 2% of the patients we treat and are used to illustrate unusual injuries for record purposes, and to record our techniques in treatment and rehabilitation for postgraduate teaching purposes; these items account for 50% of the volume of the department's work. Illustrating the work of our two Medical Research Council units accounts for 44% of the volume, the remaining 6% to illustrate lectures on routine subjects to industrial nurses, undergraduates, and industrial medical officers. I believe these photographic records taken by *competent technicians* under the guidance of research workers and clinicians have enabled us to pass on knowledge in a clearer and better manner than any other single medium.

Dr. Brailsford must have been at some pains to bring his next statement into his correspondence—that the Accident Hospital, Birmingham, is "run without a radiologist." This statement needs qualification, otherwise the practice of the hospital may be misunderstood and a somewhat dangerous precedent quoted. At our inception in 1941 Dr. Brailsford was appointed consultant radiologist and has served us continuously since that date. At every stage of planning, installation of equipment, staffing and maintaining our 24-hour-a-day *x*-ray service Dr. Brailsford has rendered invaluable aid. Throughout the years he has attended the hospital at regular weekly intervals when radiographs of interest or of pathological nature have been referred for his opinion.

The practice of this hospital differs in no way from modern fracture practice when we insist that the routine interpretation of bone, joint, and soft-tissue injury is an integral part of the clinical examination, assessment, and plan for treatment of each patient and must be in the hands of the responsible surgeon. Following this practice throughout recent years clinicians have advanced knowledge in the anatomical interpretation of bone, joint, and soft-tissue deformity and in methods of correction of these deformities. The radiologically controlled nailing operation for femoral neck fractures is perhaps the best-known example in this field, but there are many others. We do not seek to divorce the radiologist from contributing his share in this work. With the right approach and the proper team spirit the radiologist with his experience and great technical ability has much to offer in our search for new knowledge.—I am, etc.,

WILLIAM GISSANE,
Clinical Director,
Birmingham Accident Hospital.

The Homosexual in the Courts

SIR,—Once again I read that a man convicted of male importuning has walked broken and dishonoured from the dock. Throughout the years I have observed these disastrous lapses and noted they present a curious and significant similarity. They often occur in men of late middle age who in a large proportion of cases have had an honourable and distinguished career. With everything to lose—family, position, friends—they have laid themselves open, with a complete disregard of consequences, to this shattering and dishonouring charge. Their chance of being arrested is mathematically equal to that of a man who walks up to an inoffensive citizen and punches him on the nose. It must be plain then that a man who so rashly lays himself open to complete ruin must be suffering from an uncontrollable impulse of psychopathic origin.

I must confess I am puzzled by the silence of the psychiatrists anent this strange matter. They leap forward in battalions to defend the shoplifter, the sadist, the murderer, but maintain a lily-livered neutrality to this type of offence. Now I submit that such a man has flared up into an Indian summer of sex which has undergone by transference a homo-deviation. He is the victim of a tragic climacteric, and it is far from just, on discovering his sad condition, to tear down the whole of his life's edifice and cast him into the pit. Surely, instead of bringing the accused straight before a magistrate, with all the ruinous consequences, it should be possible by adequate preliminary investigation to determine whether he is a sick man in sore need of help and guidance, to tide him over the bitter phase that has overtaken and overwhelmed him.

I am aware that there is a tendency among members of the judiciary to complain that they are psychiatrist-ridden—indeed, this was made apparent at the recent magistrates' convention. I was told some weeks ago by a magistrate that "he didn't believe in this psycho-analysis stuff." Nevertheless, it is the solemn duty of those who administer justice to acknowledge and act upon the great advance that has been made in the study of the human mind.—I am, etc.,

London, S.E.12. ERIC COPLANS.

POINTS FROM LETTERS

Service Doctors in Far East

Lieut. D. R. MORGAN, R.A.M.C., writes: . . . The conscript who is unfortunate enough to be sent to the Far East is sent there for the whole of his service—a period of between eighteen months and two years. During this time he has no hope of leave in the U.K. A high proportion of the doctors out here are married. Because the present Regulations do not permit it the Army will not grant free passages to enable these officers' wives to join them. The "regular" obtains a passage with little difficulty. The allowances payable to an officer living out here (with his wife) are generous and enable him to live in comfort if not in luxury. The conscript, being denied these concessions, has to keep himself out here, where the cost of living is extremely high, in addition to supporting his wife in England. For some of us this leads to financial difficulty. Particularly does it affect those who are under 25 and endure the additional penalty of a half-scale marriage allowance. The purely humanitarian aspect of the two years' separation from one's wife—at a time when separation is not necessary—of course carries no weight with the authorities out here—most of whom I notice have their families out with them. . . . No improvement can be expected from the Army authorities themselves. Anything that is done will have to be done at Parliamentary level. I wonder if anyone agrees with me in thinking that something should be done, and I wonder if anyone with sufficient influence will be prepared to help.

Railways and Poliomyelitis

Dr. R. D. MACLEAN (Fao, Iraq) writes: . . . The railways are justly proud of the small number of fatal accidents which occur, but is it not possible that a few of the victims of poliomyelitis should be added to their figures? Surely it is about time that railway lavatories were brought into line with modern knowledge of the spread of disease, and faeces were no longer disposed of in a manner which would disgrace a cat?

Pain in Childbirth

Dr. CYRIL V. PINK (London, S.E.3) writes: . . . Through many years of obstetric practice I have taken a special interest in the subject of pain in childbirth, and I am convinced that in a general way it is not the trigger stimulus that awakens the maternal instinct. In a few cases it may do so and in a few it may cause a transient hatred of the child. No doubt Dr. Hadfield could name the psychological make-up in these two groups; I merely know that they are both small. On the other hand, I have seen six births completely free of pain and hundreds in which the mother banished the pain to the background by the joy and excitement of full conscious participation in the act of birth: here, I suspect, is the trigger stimulus, if indeed one is needed. Anyone who has seen a painless birth cannot fail to realize that he is witnessing normality. I entirely agree with Dr. Hadfield's main point—"that further scientific investigation of the matter in human mothers is obviously called for before we launch on a wholesale administration of anaesthetics, to determine whether in fact there is any diminution of maternal devotion resulting. . . ." Of course the woman who suffers severe pain should have an anaesthetic, but if a girl is brought up to regard the birth of her baby as a festival—a birthday in fact—and if the antenatal work is done carefully, then the pain can be reduced to vanishing point and full conscious participation in the birth will enhance her maternal devotion.

Vaccination

Surgeon Commander JOHN VINCENT SMITH (ret.) (London, N.W.11) writes: I was agreeably entertained by a broadcast on Dr. Jenner (B.B.C. Home Service, June 19) until the present-day conversation at the end, when a mother said, "When I was vaccinated it didn't take." What were listeners intended to infer from the doctor's non-committal reply? That this woman had, through vaccination in infancy, acquired immunity that was proved later by a failure to "take"? This would support a widespread popular belief, often supported by members of the medical profession, whereas those who have much experience of the revaccination of adults have come to recognize definite forms of modified reaction in the less susceptible, without which any vaccination must be regarded as unsuccessful. It is true these may be interpreted by the subject as "didn't takes," but surely it is the duty of the doctor to ensure that they occur and are recognized. Many of us have witnessed tragedies abroad in Europeans who have relied mistakenly on so-called negative reactions, and I have seen a fatal attack start three weeks after such spurious protection. Investigation showed, as one expected, that the lymph used had been stored for some months. It is perhaps insufficiently known that lymph should be used within seven days of manufacture, though there are satisfactory methods of storing it for longer; but the only real satisfaction and confidence can be obtained from seeing the reaction and demonstrating it to the subject.

Medico-Legal

ANOTHER SWAB CASE

Failure of a Patient's Claim

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

Dr. Elizabeth M'Callum, a gynaecological surgeon, of Edinburgh, performed an operation on a patient with complete success, but some three weeks afterwards a nurse removed a swab from the vagina. The patient thereupon sued the surgeon for negligence, alleging injury to her health and claiming £300 damages.

Dr. M'Callum said in evidence[1] that the leaving in of a swab would not produce any permanent injury or ailment, only a temporary discomfort. In some cases it might prejudice the result of the operation, but here there was no indication that it had done so, nor had it prevented the healing of the tissues. In cross-examination she said that the appropriate time to remove such a swab was on the day after the operation. At the beginning the patient had proceeded apparently normally towards a cure, but abnormality had begun to develop later. She had had in mind the possibility that a swab had been left in too long, but the patient had seemed to be afraid to tell. The leaving in of the swab would in most cases be the obvious explanation of the abnormality, but this patient had had radium treatment. She admitted that a nurse might have failed in her duty.

The sister in charge gave evidence that some days after the operation she had carried out an external examination because the patient was complaining of pain. She had discovered a swab and removed it with sterile forceps. She had told the patient about the swab and expressed her surprise at finding it. Under cross-examination she admitted that it was her duty to take out the swab after the operation. She had taken it out, but another had got in. She had told the patient not to tell the doctor because the doctor would have talked to all the other patients and the staff did not want her to do that. Prof. R. W. Johnstone said that he had examined the patient and formed the view that the operation had been completely successful. There was no indication that she had suffered any permanent ill as a result of the swab being left in her body.

Judgment

Lord Birnam, the judge, said that the allegation of breach of professional duty was entirely unjustified. The grounds of fault were not established, and were indeed completely negatived by the evidence. Even if a fault had been proved, he doubted whether the patient would have been entitled to more than nominal damages, as she had allowed the surgeon to remain in ignorance of the fact and had thus delayed remedial treatment. The surgeon gave one answer in cross-examination which deserved comment. She said that she thought that in practice she accepted responsibility for the actions of the nurses who were carrying out the work for her. The principle that a doctor was responsible for the actions of nurses as though they were his servants had never been laid down, nor even seriously maintained, in an action of this kind. Perhaps when a nurse was under the immediate control of a doctor he might be responsible for her as an agent, though in the classical swab cases surgeons had been found liable not for the errors of the sister counting the swabs out but because the court had said that they, the surgeons, ought to count the swabs themselves. In cases where nurses had committed errors in the absence of the medical man the court had held that he was not liable (e.g., *Perionowsky* v. *Freeman*).

[1] *Evening Times* (Glasgow), March 3.

To help people who may be uncertain how to get in touch with doctors who will undertake their care in the new Health Service the Minister of Health has arranged for lists of participating doctors to be available in post offices, public libraries, and similar places after June 21. People having any difficulty are advised to get in touch with their Local Executive Council, whose address they can find at the post office.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

In the Congregation held on June 10 the honorary degree of D.Sc. was conferred by General Smuts, the newly installed Chancellor, on Sir Hugh Lett, Bt., K.C.V.O., C.B.E., F.R.C.S., President of the British Medical Association, Sir Wilson Jameson, K.C.B., M.D., F.R.C.P., Chief Medical Officer of the Ministry of Health and Ministry of Education, and Sir Paul Gordon Fildes, O.B.E., M.B., B.Chir., F.R.S., Director of the Department of Chemical Bacteriology, Medical Research Council.

The following medical degrees were conferred on June 12:

M.D.—*P. W. Hutton, *E. Watson Williams, H. Stott, F. M. P. Eckstein.
M.B., B.CHIR.—J. P. M. Bensted, M. C. H. Bennett.
* By proxy.

The following candidates have been approved at the examination indicated:

FINAL M.B.—*Part I (Surgery, Midwifery and Gynaecology)*: R. D. Allen, T. B. Anderson, P. J. Andrew, N. B. Atkin, J. A. Balint, J. R. Bennett, P. R. Birks, T. B. Boulton, D. R. Bowsher, Mrs. R. C. Chapman, P. J. Crosland-Taylor, R. D. Cundall, P. G. R. Dench, D. J. Douglass, J. R. Edsall, H. E. Flint, J. G. Gill, D. Gough, R. V. Grange, J. R. Harris, G. R. Hervey, P. J. Higgins, L. C. Hirst, A. J. Lane, G. A. D. Lavy, D. E. Lewin, H. G. L. Lloyd-Thomas, J. D. Llywelyn-Jones, A. A. McInnes, J. W. MacLeod, G. Melvill Jones, J. L. Millard, J. G. B. Myles, A. E. Neill, D. N. Phear, J. E. Phillips, H. Piggott, M. I. M. Pines, D. F. Richards, R. A. Robinson, P. G. Seed, M. E. Sidaway, B. J. Spedding, L. R. Spencer, T. E. Stockley, J. W. M. Stone, O. K. Thomas, B. E. L. Thompson, S. E. Trickey, T. J. D. Walker, I. S. Waller, S. A. Wartski, H. L. J. Wilson, G. E. W. Wolstenholme.

UNIVERSITY OF LEEDS

Professor Douglas Robert MacCalman, M.D., has been appointed Nuffield Professor of Psychiatry.

Professor MacCalman graduated at Glasgow University in 1929 and proceeded M.D. in 1933. He was lecturer in psychopathology at Aberdeen for eight years and then held the chair of mental health since its foundation two years ago. After graduating he studied for a year in the U.S.A., working at the Boston Psychopathic Hospital and the Johns Hopkins Hospital.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examination indicated:

M.D.—J. N. P. Davies (with distinction), Cecil M. Drillien.

UNIVERSITY OF EDINBURGH

J. H. Taylor has been approved at the examination for the degree of M.D.

UNIVERSITY OF WALES

The following candidates for the degrees of M.B., B.Ch. at the Welsh National School of Medicine have satisfied the examiners at the examinations indicated:

PATHOLOGY AND BACTERIOLOGY.—Marjorie J. Adams, Mary P. E. Alban, F. W. Beswick, C. H. Burman, Maldwyn L. Cattell, P. R. C. Davies, R. B. Davies, Elizabeth B. Daw, L. Elton, *A. R. Evans, E. H. Evans, K. Gammon, P. H. Griffiths, E. I. Gwynne, *G. E. Heard, J. I. Hopkins, June D. James, H. B. Jenkins, Ruth E. Lewis, Mair G. Lloyd, Nano J. Morgan, Rhona E. Morgan, B. Phillips, H. M. N. Rees, J. A. E. Richards, R. M. Richards, D. C. Saunders, C. P. Seager, J. A. Stanton, Brenda M. Thomas, D. G. H. Thomas, E. Thomas, J. G. H. Thomas, S. Thomas.

PHARMACOLOGY.—A. G. Alexander, *D. F. Brown, L. M. Charles, D. E. Copas, B. M. Davies, Ilid M. L. Davies, *J. M. S. Dixon, J. L. A. Dowse, D. R. T. Evans, D. W. Evans, J. Evans, A. J. Hooper, J. Magell, T. M. Morgan, W. B. Morgan, E. D. Morris, S. E. Ll. Morris, T. L. Morris, G. J. Moses, S. J. S. Polwin, Dilys Rees, J. W. Rees, T. A. I. Rees, Esther H. Thomas, Margaret E. Thomas, Margaret H. J. Thomas, Anne G. Tighe.
* With distinction.

The following candidates in the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

TUBERCULOUS DISEASES DIPLOMA.—Dora Buckley, A. G. Buick, L. Erin, A. C. S. Iyer, W. Laurie, S. Y. Liu, J. P. Lyons, Faith M. Macken, M. S. Mitra, A. I. Motala, Stella A. Parikh, U. M. R. Polichetti.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

The following candidates have been approved at the examination indicated:

DIPLOMA IN INDUSTRIAL HEALTH.—R. McL. Archibald, J. H. Bell, J. H. Chambers, J. L. Fyfe, D. Livingstone, E. Livingstone, D. MacInnes, D. A. MacLean.

The Services

The King of Egypt has conferred the decoration of the Order of El Maaref (Third Grade) upon Lieutenant-Colonel Joseph Caplan, R.A.M.C., in recognition of valuable services rendered by him in connexion with the suppression of malaria.

Medical Notes in Parliament

Essays by Colonial Medical Officers

Sir ERNEST GRAHAM-LITTLE inquired on June 17 whether Mr. Creech Jones knew that his circular 12412/12.2.48, requiring that essays by medical officers in the Colonial Service which it was desired to publish should be first submitted to him to ensure that nothing was published which might misrepresent the policy of the Colonial Governments, had caused misgiving among medical officers in the Service. Sir Ernest asked the Minister to withdraw this instruction.

Mr. CREECH JONES answered that Sir Ernest's question implied that the effect of this circular was to impose a new general regulation about publication by medical officers in the Colonial Service. He declared that, in fact, its purpose was to inform Colonial Governments of a generous offer by the National Association for the Prevention of Tuberculosis to award a prize of 100 guineas for an essay on the control of tuberculosis in Colonial territories. The reference to the publication of essays was only incidental. One of the rules of the competition said that essays sent in should become the property of the N.A.P.T. and that any of them could be published at its discretion. The circular drew attention to this and said that in order to ensure that nothing was published which might misrepresent the policy of Colonial Governments or of His Majesty's Government the Secretary-General of the Association had agreed to arrange that essays which it was desired to publish should first be submitted to the Colonial Office. This conformed generally with Colonial Regulation 57, one of whose provisions was that an officer should not, without the express permission of the Secretary of State or of the Governor, publish in any manner anything which might be reasonably regarded as of a political or administrative nature. Mr. Creech Jones said he thought it was right in the interests of all concerned to make this precautionary arrangement. He saw no reason why it should be altered. He assured Sir Ernest that there was no intention whatever of fettering free scientific discussion.

Call-up of Young Doctors

On June 24 Sir ERNEST GRAHAM-LITTLE asked whether Mr. Bevan knew that the recent call-up of young medical practitioners, notwithstanding representations that the supply was more than adequate, had caused hardship to those holding "A" appointments at hospitals, who would thus be prevented from proceeding to "B2" appointments, with detriment to their professional careers and, in particular, would make it impossible fully to carry out the recommendations of the Goodenough Committee, which declared that house appointments for one year should be the minimum experience for the young practitioner before commencing practice.

Mr. BEVAN answered that he was fully aware of the implications of the decision referred to. The Medical Priority Committee, on whose advice the decision was taken, recommended it as an exceptional means of meeting an expected deficiency in young practitioners for the Services during the second half of the year. The position would be reviewed towards the end of the year. [The circular on recruitment for "A" posts issued by the Central Medical War Committee was published in full in the *Supplement* of June 19 at p. 180.]

Patients Remote from Doctors

Mr. TOUCHE on June 24 reported that some persons joining the National Health Service had been told that they could not retain the services of the doctor whom they had engaged for several years because they lived outside the area for which the doctor was zoned. He asked Mr. Bevan to amend the Regulations to enable such persons to retain the services of their present medical advisers.

Mr. BEVAN replied that a doctor had the right when joining the Service to fix the area within which he would visit patients in their homes, as he was required to do when necessary. There was nothing to stop him accepting patients who lived outside this area provided he was prepared to visit them.

Cerebral Palsy.—Mr. WARBEY asked on June 17 what arrangements were being made to increase the number of units providing treatment for cerebral palsy. Mr. GEORGE TOMLINSON replied that two new special schools, one day and one boarding, for children suffering from cerebral palsy would be ready shortly. Further schools were proposed by several Local Education Authorities. The extension of two hospital schools to include this work was also being considered.

School Meals.—It is estimated that the combined calorie value of school milk and dinner averages about 900 calories a day. Last February 4,366,000 pupils were having milk and 2,596,000 were having dinner at school out of a total of 4,963,000.

No. 24

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 12.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. *Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for:* (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland. A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1948 (a)	(b)	(c)	(d)	(e)	1947 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	45	6	24	1	—	49	2	26	2	—
Deaths		—	—				—	1		
Diphtheria	160	19	47	5	4	195	17	38	15	4
Deaths		—	1	—	—	2	—	—	—	—
Dysentery	95	11	44	—	1	48	5	39	1	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	1	—	—	—	—	—	—	—
Deaths		—					—			
Erysipelas			35	5	1		1	21	4	1
Deaths		—								
Infective enteritis or diarrhoea under 2 years	38	2	8	25	2	83	6	24	47	6
Deaths				4					8	
Measles*	12,225	1083	251	125	66	10,796	515	151	149	16
Deaths†			1	1	—	4	—	1	—	—
Ophthalmia neonatorum	48	1	21	—	—	68	4	16	—	—
Deaths										
Paratyphoid fever	6	1	—	—	—	12	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	460	15	2	8	—	380	17	2	2	8
Deaths (from influenza)‡	3	—	1	—	1	4	—	1	—	—
Pneumonia, primary	163	30	150	24	11		12	129	20	3
Deaths				1					6	
Polio-encephalitis, acute	1	—				3	—			
Deaths							—			
Poliomyelitis, acute	13	3	8	—	—	31	4	2	8	—
Deaths§	2	1					—			
Puerperal fever		1	10		—		1	21		—
Deaths										
Puerperal pyrexia‖	112	9	13	4	—	124	4	10	—	4
Deaths		—					1			
Relapsing fever	—	—				—	—	—		—
Deaths										
Scarlet fever	1,562	125	293	53	37	833	73	96	21	30
Deaths†		—	—	1	—	1	—	—	—	—
Smallpox	—	—	—		—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever		3	—	1	1	1	4	—	—	1	—
Deaths	—		—	—	—		1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—	—
Whooping-cough*	3,298	248	48	80	14	2,062	262	108	51	13
Deaths	12	2	—	2	—	10	1	1	3	—
Deaths (0–1 year)	289	39	43	11	14	395	44	63	41	17
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,314	696	531	180	119	4,111	613	554	198	96
Annual death rate (per 1,000 persons living)			10·7	11·3				11·5	12·5	
Live births	8,349	1307	1082	431	303	9,932	1660	1218	391	272
Annual rate per 1,000 persons living			21·8	27·0				24·5	24·7	
Stillbirths	212	21	33			252	32	29		
Rate per 1,000 total births (including stillborn)			30					23		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.
† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.
‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.
§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.
‖ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* the only changes of any size in the returns of infectious diseases were increases in the number of notifications of measles 1,401 and whooping-cough 91.

The trend of measles over the recent weeks has been one of alternate increases and decreases. The largest rises during the week were: London 265, Yorkshire West Riding 180, Essex 179, Yorkshire East Riding 136, Lancashire 132, and Middlesex 112. The incidence of whooping-cough showed local fluctuations, but the only large change was an increase of 62 in Surrey. The returns of diphtheria and scarlet fever did not differ appreciably from those of the preceding week.

The largest centres of dysentery were: Yorkshire West Riding 41 (Bradford C.B. 24, Sheffield C.B. 10), London 11, Middlesex 11, and Lancashire 10. The only counties with more than one notification of poliomyelitis were: London 3, Surrey 2, Staffordshire 2.

In *Scotland* increases were recorded in the notifications of measles 56, scarlet fever 36, and diphtheria 11, while decreases occurred in the incidence of dysentery 20 and acute primary pneumonia 30. There were 8 cases of poliomyelitis notified—the largest number for any week of this year; 4 of the cases were notified in the county of Fife. A rise in the incidence of scarlet fever was general throughout most of the country. A fall of 10 was recorded in the notifications of diphtheria in the city of Glasgow, but in the remainder of the western area a rise of 12 occurred.

In *Eire* decreases were recorded in the notifications of measles 37, whooping-cough 16, and diphtheria 8, while an increase was reported for scarlet fever 16 and for diarrhoea and enteritis 13. A small fall in the incidence of measles and whooping-cough was recorded in most areas except Dublin C.B., where measles increased by 11 and whooping-cough remained at a constant level.

In *Northern Ireland* there was no appreciable change in the trends of infectious diseases.

Annual Report for 1943

Part 1 of the Statistical Review, 1943, for England and Wales now published shows that the experience of this year was good. The death rate was 13.0, and although this was 0.7 above the rate for 1942 it was 0.5 and 1.4 below the values for 1941 and 1940. Infant mortality and maternal mortality declined and were the lowest rates recorded up to that year. The mortality from influenza was the highest since 1937 and was nearly four times the rate for 1942. Deaths from pulmonary tuberculosis numbered 353 more than in 1942 but were less than in either of the first two war years. Deaths from cancer increased. The comparative mortality index for males rose from 1.013 in 1942 to 1.023, while the index fell from 0.963 to 0.960 for females.

Week Ending June 19

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,542, whooping-cough 3,086, diphtheria 158, measles 10,624, acute pneumonia 456, cerebrospinal fever 45, acute poliomyelitis 15, dysentery 91, paratyphoid 8, and typhoid 7.

Medical News

Sir Stafford Cripps at Roffey Park

The Rehabilitation Centre at Roffey Park, Sussex, is to be incorporated with St. Thomas's Hospital on July 5. Sir Stafford Cripps visited it recently to open the new Training and Research Department. He said that Roffey Park was one of those valuable experiments that had come into being through the co-operation of many disinterested individuals who saw an evil and set out to do the best to counter it. Great industrialists, medical men, and experts of all kinds had with the help and encouragement of many administrators set up an institution which now had a well-deserved world-wide reputation. Roffey Park catered for the individual and had brought relief and hope to thousands of depressed and broken down men and women. Here they had a great laboratory of industrial psychology and clinical treatment which could provide the most valuable material upon which to base action in the industrial and medical field, and also instruction to those concerned with these matters. It was quite frightening when they saw to-day the very large amount of sickness absenteeism which arose not from what in the past they had regarded as illness or disease but from those once vague and rather despised causes which had passed under names such as neurasthenia.

At present it was probable that the country lost 40 million working weeks a year from sickness absenteeism; that meant the average man lost 10 days a year and the average woman 15 days from sickness. A very large part of that was due to stress diseases. Both the Industrial Health Research Board and the Medical Research Council had done much excellent research work, but it had not earned the practical appreciation and application it deserved. The close relationship between stress sickness and industrial morale had been made clear, and it had been shown that the rate of absenteeism arising from that cause was at a minimum where these four conditions applied: (i) The selection of employees was made on a proper and sound basis. (ii) There were adequate chances of promotion for efficient workers. (iii) There was full knowledge of the purpose and objects of the work. (iv) There was stability in the organization itself. These four matters related primarily not to doctors but to managers, and what these researches had shown was that a good deal of stress disease was being created by management through lack of understanding or failure to take the necessary preventive measures. That emphasized the need for management and medical science to get together in the attack upon that industrial handicap.

It was sometimes forgotten that to-day some 400,000 persons in this country were engaged in managerial functions of one kind or another and that there were 12,000 entrants a year, many of whom at present were very ill equipped to appreciate the importance of the psychological factors in human relationships. He thought that all this was now recognized as of first-class importance and was no longer regarded as the hobby of a few cranks. But the practice lagged very far behind the theory in the average place of employment, and they must do all they could not only to research and educate but to bring about the practical application of the remedies and methods that could now be safely advocated as cures or preventions of stress diseases. Here in the training department at Roffey Park regular courses had been and were being provided for both doctors and industrialists, and the two partners in solving the problem were being brought into the most useful contact with one another.

Functions and Design of Hospitals

The Nuffield Provincial Hospitals Trust and the University of Bristol are jointly sponsoring an investigation into the functions and design of hospitals. Its aim will be a thorough study of hospital requirements in present-day society, from the human, the administrative, and the environmental points of view. The investigation will run alongside the hospital job-analysis already being undertaken for the Nuffield Provincial Hospitals Trust. Mr. L. Farrer-Brown, secretary of the Nuffield Provincial Hospitals Trust, is acting as co-ordinating chairman of the inquiry. The director of research is Mr. John Madge, M.A., A.R.I.B.A., who has been seconded from his work at the University of Bristol for this purpose. The research team will have the assistance of a panel of expert advisers.

Chemists' Negotiations Fail

Scottish pharmacists are unique among the professions concerned with the National Health Service in negotiating separate terms for Scotland. They are asking for a higher rate of payment for dispensing than that in England, and the Department of Health is offering an average fee of 1s. 3d. as compared with 1s. offered in England. Negotiations have broken down. Local Executive Councils have therefore been provided by the Department of Health with a statement of the remuneration proposed, and they will send a copy of it to each chemist in Scotland inviting him to accept service. The chemists' contracts under the N.H.I. Act end on July 4.

Entered Health Service

According to the Ministry of Health the number of doctors on the medical lists of Executive Councils in England and Wales reached 14,784 by June 26, and 4,851,000 people had applied to go on the lists of doctors taking part in the Service. This number does not include those at present on the panel—about 20,000,000. They will automatically be transferred.

Surrey Hills Clinic

The Surrey Hills Clinic, Caterham, was officially opened on Friday, June 18, by the Prime Minister, the Rt. Hon. C. R. Attlee, who was accompanied by Mrs. Attlee. A vote of thanks to the Prime Minister was proposed by Dr. Maurice Davidson and seconded by Lord Uvedale. The opening ceremony was attended by over a hundred guests, who later inspected the Clinic and the gardens.

Dispensing in England and Scotland

The Ministry of Health has now issued the Report of the Working Party on Differences in Dispensing Practice between England and Wales and Scotland (H.M.S.O., 1s.). The details of this report were fully summarized in our issue of May 1 (p. 851).

Register of Speech Therapists

A new *Register of Speech Therapists* has been published by the Board of Registration of Medical Auxiliaries (Tavistock House (North), Tavistock Square, London, W.C.1), and medical practitioners can obtain a copy free of charge on application to the registrar of the Board at the above address.

World Health Assembly

The United Kingdom delegation to the first World Health Assembly, which opened in Geneva on June 24, is headed by Sir Wilson Jameson, Chief Medical Officer of the Ministry of Health. His place as chief delegate will be taken over later by Dr. Melville D. Mackenzie.

COMING EVENTS

Middlesex County Medical Society

The next meeting of the Middlesex County Medical Society is being held on Friday, July 2, at 4 p.m. at the Central Middlesex County Hospital. Address by Dr. Gissane: "The Organization of an Accident Service."

First International Students' Clinical Congress

The British Medical Students' Association will hold an International Congress of Clinical Medicine on July 6–23 in London, Birmingham, and Oxford successively, under the presidency of Prof. J. A. Ryle. About 200 delegates from more than 30 countries will attend. The congress will consist of ward teaching, lectures, demonstrations, medical films, and visits to research laboratories; there will also be visits to theatres and other places of interest. Information may be obtained from the British Medical Students' Association, B.M.A. House, Tavistock Square, London, W.C.1.

Royal Medico-Psychological Association

The 107th annual meeting of the Royal Medico-Psychological Association will be held in London on Wednesday, Thursday, and Friday, July 7, 8, and 9. The opening meeting will be held at the Royal Society of Medicine, 1, Wimpole Street, W., on July 7, at 10.15 a.m., when Dr. William Rees Thomas, F.R.C.P., will be inducted as President and other officers, council, and committees will be appointed. At 2.30 p.m., at 11, Chandos Street, W., a discussion on "The Training and Scope of Psychiatric Social Workers in Relation to Adults" will be opened by Dr. J. B. S. Lewis, Dr. W. J. T. Kimber, and Miss R. S. Addison. At 7.15 for 7.45 p.m. the annual dinner of the association will be held at the Café Royal, Regent Street, W. On July 8, at 10.50 a.m., a steamer will convey a party, not exceeding 100, from Westminster Pier to the Ford Motor Company's Works at Dagenham, where the firm's medical organization will be inspected. At 8 p.m., at 11, Chandos Street, W., Dr. J. Carse and Dr. T. J. Hennelly will open a discussion on "Planning a Psychiatric In-patient Service." On July 9, at 10.30 a.m., at 11, Chandos Street, W., a discussion on "The Relation of the Mental Hospital to the Community" will be opened by Dr. W. McCarten, Dr. J. Ferguson, and Dr. K. C. Bailey. A meeting of the Mental Deficiency Section will be held at 11, Chandos Street, W., on July 9, at 2.30 p.m. The Child Psychiatry Section of the association will hold a meeting at the Royal Society of Medicine on July 9, at 4.15 p.m., when members of the British Paediatric Association and of the Section of Paediatrics of the Royal Society of Medicine are invited to attend. A film will be shown and a paper read on "Grief—a Peril in Infancy," by Dr. Rene Spitz, of New York.

Gerontological Conference

A conference of the British Society for Research on Ageing will be held at the Royal Society of Medicine, 1, Wimpole Street, London, W., on Wednesday, July 7, from 10 a.m. to 6.30 p.m., when papers on results of their gerontological research will be read by Sir Frederick Bartlett, F.R.S., and Prof. E. C. Dodds, F.R.S., and Drs. F. Bourliere (Paris), L. Cosin, F. A. Denz, E. Geiringer, V. Korenchevsky, O. Olbrich, H. Brown, and M. H. Ferguson, and Prof. M. Beltran-Baguena (Valencia University, Spain). The conference is open to all interested in gerontology. The address of the society is c/o Department of Physiology, University of Oxford.

National Institute for the Deaf

The annual general meeting of the National Institute for the Deaf will be held at Connaught Rooms, Great Queen Street, Kingsway, London, W.C., on Wednesday, July 7, at 2.30 p.m., when the President, the Duke of Montrose, will preside. The Minister of Health, the Rt. Hon. Aneurin Bevan, M.P., will speak on "The National Health Service and the Deaf."

Guy's Hospital Medical School

The second Addison Lecture will be delivered by Dr. E. B. Astwood, of Harvard Medical School, on "The Medical Treatment of Hyperthyroidism" in the Physiology Theatre, Guy's Hospital Medical School, London Bridge, S.E., on Friday, July 9, at 5 p.m., when the chair will be taken by C. R. Harington, M.A., Ph.D., F.R.S. Applications for tickets should be made to the Dean, Medical School, Guy's Hospital, London, S.E.1.

Ross Jubilee Exhibition

To mark the fiftieth anniversary of the discovery of the transmission of malaria by mosquitoes, finally completed by Ronald Ross on July 9, 1898, an exhibit has been prepared showing the history of developments in malaria control, and examples of the present stage of malaria control in many parts of the world. The exhibit, in the museum of the London School of Hygiene and Tropical Medicine, will be open to the public from 11 a.m. to 4 p.m. on July 6, 7, 8, and 9. Admission is free and organized groups can be shown round by arrangement with the Director of the Ross Institute of Tropical Hygiene, Keppel Street, Gower Street, London, W.C.

Arts in the Hospital

An exhibition of mural paintings by the Department of Arts, South-East Essex Technical College, will be opened at Orsett Lodge Hospital, near Grays, by Mr. Adrian Hill, R.B.A., R.I., R.O.I., on Friday, July 9, at 2.45 p.m.

Association of Army Psychiatrists

The fifth reunion of Army Psychiatrists will take place at Slater's Restaurant, 18–24, Kensington High Street, London, W., on Saturday, July 10, from 7.30 p.m. to 10.30 p.m. Details may be obtained from the honorary secretary, Lieutenant-Colonel J. C. Penton, R.A.M.C., The Old Farm House, 1, Gatehill Road, Northwood, Middlesex.

International Congress of Otolaryngology, 1949

The British Association of Otolaryngologists is organizing the Fourth International Congress of Otolaryngology, to be held in London from July 17 to 23, 1949. There will be further meetings, for those who wish to go, at Oxford, Cambridge, and Edinburgh on July 25 and 26. It is hoped that a full academic programme will be arranged, and also various social functions. The secretaries of the national otolaryngological societies have been circularized and asked to send a list of their members for individual notification. Should any association not receive this letter, they should communicate with the General Secretary of the Congress, Mr. F. C. W. Capps, F.R.C.S., 45, Lincoln's Inn Fields, London, W.C.2.

SOCIETIES AND LECTURES

Monday

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At the South Kensington Hotel, 41, Queen's Gate Terrace, S.W., July 5, 7.30 for 7.45 p.m. "*That Capital Punishment is Bad Prophylaxis.*" Annual General Meeting and Dinner-debate.

WESTMINSTER HOSPITAL SCHOOL OF MEDICINE: Meyerstein Lecture Theatre, Horseferry Road, S.W.—July 5, 5.30 p.m. Clinico-pathological Demonstration. Subject: "*Subacute Bacterial Endocarditis.*"

Thursday

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—July 8, 5 p.m. "*Carcinoma of the Pancreas.*" Surgery Lecture by Dr. R. B. Cattell (Surgeon, Lahey Clinic).

Friday

GUY'S HOSPITAL MEDICAL SCHOOL, London Bridge, S.E.—At Physiology Theatre, July 9, 5 p.m. Second Addison Lecture: "*The Medical Treatment of Hyperthyroidism,*" by Dr. E. B. Astwood (Harvard Medical School).

APPOINTMENTS

Frederick M. B. Allen, M.D., F.R.C.P., has been appointed Nuffield Professor of Child Health in Queen's University, Belfast.

Dr. Allen graduated with honours at Belfast University in 1920 and proceeded M.D. three years later. He was elected F.R.C.P. in 1939.

He is honorary physician to the Belfast Hospital for Sick Children and honorary physician in charge of infants to the Royal Maternity Hospital, Belfast. A former honorary secretary of the Belfast Division of the British Medical Association, Dr. Allen was honorary local general secretary of the Annual Meeting when the Association met at Belfast in 1937.

F. Denis Hindmarsh, M.S., F.R.C.S., Assistant Surgeon, Royal Victoria Infirmary, Newcastle-upon-Tyne.

Mr. Hindmarsh graduated in 1938, took the F.R.C.S. in 1945 and the M.S. of Durham University in 1946. He has contributed papers to this *Journal* on "Gangrenous Enteric Intussusception in Adolescence" and "Bile Peritonitis in Infancy."

Dr. William Parker, of Mumbles, Swansea, has been nominated by the Swansea Executive Council as the first President of the Association of Welsh Executive Councils under the National Health Service Act, and has been appointed a representative of the Council on the association.

Dr. Parker, who graduated M.B., Ch.B. at the University of Glasgow in 1924, is Joint Honorary Secretary of the Swansea Division of the British Medical Association, Chairman of the Local Medical and Panel Committee, and President of the Welsh Association of Insurance Committees.

Dr. David James McLeish has been appointed Chairman of the Board of Management of Bridge of Earn Hospital, Glenlomond Sanatorium, and Ochil Hill Sanatorium by the Scottish Eastern Regional Hospitals Board under the National Health Service Act.

Dr. McLeish graduated M.B., Ch.B., at the University of Glasgow in 1904, proceeded M.D. three years later, and took the D.P.H. in 1910. He retired two years ago from the post of medical officer of health for Perthshire and Kinross.

Neville C. Oswald, M.D., F.R.C.P., Assistant Physician, Brompton Hospital, London, S.W.

Dr. Oswald qualified at Charing Cross Hospital in 1934, obtaining his M.R.C.P. in 1935, and proceeding M.D. in 1946. He was elected F.R.C.P. in 1947. He was formerly registrar at the Brompton Hospital and has contributed papers to the medical press on tuberculosis.

A. P. M. Page, M.D., M.R.C.P., D.C.H., Paediatrician, City of Nottingham and Nottingham Hospitals.

After qualifying from Bart's in 1930, Dr. Page took the London M.B., B.S. in 1931 and proceeded M.D. in 1933, taking the M.R.C.P. the same year; in 1938 he obtained the Diploma in Child Health. He has written papers on undulant fever.

Douglas Robert McCalman, M.D., Crombie-Ross Professor of Mental Health in the University of Aberdeen, has been appointed Nuffield Professor of Psychiatry in the University of Leeds, from Oct. 1.

Prof. MacCalman, who is 44 years of age, was educated at the Glasgow Academy and at the University of Glasgow and has worked for a time in the U.S.A. at the Boston Psychopathic Hospital and the Johns Hopkins Hospital.

John Peto Child, B.M., B.Ch., M.R.C.P., M.R.C.S., has been appointed physician superintendent of St. Nicholas' Hospital, Gosforth.

BUXTON, R. J., M.B., B.Chir., D.O.M.S., Ophthalmic Surgeon, Yeovil District Hospital.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.—*Assistant Morbid Anatomist*, T. H. Vickers, M.B., B.S. *Medical Officer, Tuberculosis Diagnostic Clinic*, Constance M. Hall, M.D., D.C.H. *Medical Registrar and Pathologist*, B. W. Powell, M.B., B.Ch., M.R.C.P., D.C.H. *Rece ving Room Surgeon*, R. H. Percival, F.R.C.S. *Assistant Receiving Room Surgeon*, P. P. Rickham, F.R.C.S. *Assistant Receiving Room Physician*, J. K. Martin, M.B., B.S., D.R.C.O.G., D.C.H. *Out-patient Medica Registrar*, G. P. Todd, M.D., M.R.C.P., D.C.H.

KILPATRICK, F. R., M.S., F.R.C.S., Surgeon, St. Peter's Hospital for Stone, Etc., Henrietta Street, Covent Garden, London, W.C.

LANCASHIRE COUNTY COUNCIL.—G. G. Wray, M.D., D.P.H., Divisional Medical Officer under the N.H.S. for Division No. 4 (Borough of Chorley, Urban District Councils of Adlington, Fulwood, Leyland, Longridge, Walton-le-dale and Withnell and the Rural District areas of Garstang, Preston, Chorley and a portion of Clitheroe Rural). (*Corrected announcement.*)

MACKENZIE, IAN, L.C.R.P.&S.Ed., Second Assistant Medical Officer, the Mental Hospital, Isle of Man.

NELSON, ALFRED J., M.B., Ch.B., D.P.H., Junior Assistant Pathologist, Regina Grey Nuns' Hospital, Regina, Saskatchewan, Canada.

SMART, J., M.D., M.R.C.P., Honorary Physician, Connaught Hospital, Walthamstow, London, E.

STUTT, JOHN C., M.B., B.Ch., Industrial Medical Officer, Belfast Corporation.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Guinan.—On June 9, 1948, at Bury Infirmary, to Dr. and Mrs. John S. Guinan, 112, Walmersley Road, Bury, a son.

Hughes.—On June 26, 1948, to Margaret (née Warren), wife of Dr. J. F. Hughes, Swan House, Blakeney, Gloucestershire, a daughter.

Mackenzie.—On June 8, 1948, at St. Mary's Hospital, W., to Rachel, wife of Dr. K. M. Mackenzie, son—Kenneth Ian.

DEATHS

Crerar.—On June 21, 1948, at Blair Park, Milton, Sittingbourne, Kent, James Crerar, M.B., Ch.B.Glas., aged 57.

Jones.—On June 17, 1948, at 130, Birchfield Road, Widnes, Lancs, Albert Jones, D.S.O., M.C., M.D., M.B., Ch.B., D.P.H., aged 62.

McMahon.—On June 18, 1948, fatally injured in a car accident, Marie Kathleen McMahon, M.B. B.Ch., B.A.O., N.U.I.

O'Brien.—On June 19, 1948, Patrick Joseph O'Brien, M.B., B.Ch., of Ilford, Essex.

Sessions.—On June 19, 1948, Frederick Leonard Sessions, M.R.C.S., L.R.C.P., of The Gables, Radyr, Cardiff.

Stephenson.—On June 16, 1948, at Strathearn, Monkstown, Co. Dublin, Edward Francis Stephenson, F.R.C.S.I.

Thomas.—On June 16, 1948, Leonard Kirkby Thomas, M.R.C.S., L.R.C.P., of 17, Wheeleys Road, Edgbaston, Birmingham, aged 76.

Thorpe.—On June 23, 1948, at Priory Avenue, Bedford Park, W.4, Surgeon Rear Admiral Vidal Gunson Thorpe, C.B.E., M.R.C.S., L.S.A., R.N.M.S., retired, aged 84.

Wigg.—On June 22, 1948, following an operation, James Wigg, L.R.C.P.

Windsor.—On June 22, 1949, at Royston, Herts, Charles William Windsor, M.D., J.P.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Glucose in Diabetic Coma

Q.—*Some textbooks say that the covering of insulin by glucose is essential throughout the treatment of diabetic coma, while others say that glucose is not necessary. As patients in diabetic coma are known to be very resistant to insulin, so that the danger of slipping into hypoglycaemia is very slight, and as insulin itself abolishes the ketosis of diabetes, is glucose really necessary in the treatment of coma?*

A.—Opinions on this point have differed in the past and still do. Glucose plays a most important part in the treatment of coma because under the action of insulin it is laid down as glycogen in the liver and muscles. When this occurs the acetone bodies are destroyed and the patient has a chance of recovery. When the patient is in coma there is almost certainly plenty of sugar in the blood and the body fluids, and, provided that facilities for estimating the blood sugar are not only available but are used frequently, there is no need to give any extra glucose. The real reason for giving it is the danger of hypoglycaemia. This is unlikely to occur within the first six hours of the first big dose, say 100 units of insulin, but may occur after the second or third dose of 100 units or more has been given to a resistant case. The estimation of the blood sugar at three- or six-hourly intervals should, as a rule, give enough warning that the blood sugar is responding to the insulin, but it may not. If the blood sugar is not estimated there is a grave danger that the patient may recover from the diabetic coma only to develop a hypoglycaemia which may be fatal. It is much better to give at least 50 g. of glucose with each big dose of insulin, as this can do no harm and will make it much safer to give the big doses of insulin which are often essential to save life. If the blood sugar cannot be estimated the urine should be collected by a self-retaining catheter and tested every three hours at first, and every hour when the patient is beginning to recover consciousness. It is most important to recognize that the patient's blood sugar is below the level of the threshold and to make certain that the danger of a hypoglycaemia is realized by everyone looking after the patient.

Diet and Oxalate Calculi

Q.—(*a*) *Among the measures recommended for preventing the formation of phosphatic urinary calculi are an increased intake of "soft" water, stilboestrol to increase the excretion of citrates, and aluminium hydroxide gel to reduce the intestinal absorption of phosphates. Are these measures worth while in a patient who has passed oxalate calculi?*

(*b*) *It is possible to find in the standard medical publications lists of those foodstuffs which contain oxalates, but no list to which I now have access has any information about tropical foodstuffs, particularly fruits and vegetables. Is anything known about the oxalate content of these foodstuffs?*

A.—(*a*) The writer has no experience with regard to the use of stilboestrol or aluminium hydroxide gel in the treatment of phosphatic calculi, and as the source of reference is not given any theoretical basis for their use cannot be assessed. It is considered that the amount of fluid taken is of much greater importance than the type, and this may be left to the individual preference of the patient. A total of about 8 pints (4.5 litres) of fluid should be taken daily. The urine should be kept acid in reaction, if necessary by ammonium chloride or acid sodium phosphate, and if any urinary infection is present it should be treated. These measures would also be of value in the prevention of oxalate calculi, except that the reaction of the urine is of less importance, as calcium oxalate tends to be insoluble in both acid and alkaline urines. In addition, foods containing large amounts of oxalate should be avoided, and a high-calcium diet is of undoubted value, as insoluble calcium oxalate is then precipitated in the gut and is therefore not absorbed. It has been clearly shown that the oxaluria following a meal of, say, rhubarb is prevented if excess of milk is taken at the same time. It appears that both oxaluria and oxalate calculi are rare in countries where large quantities of milk or milk products are taken in the diet.

(*b*) Oxaluria and oxalate calculi are conditions of greater medical importance in tropical than in temperate areas, and a considerable portion of the literature comes from authors in Indian practice. The following is a fuller summary of the oxalate content of various foodstuffs than appears in the standard textbooks:

A. *High oxalate content* (0.1% or over); to be avoided in oxaluria. Parsley, rhubarb, spinach, Swiss chard, cheropodium, purslane, cocoa, strong tea, figs, ground pepper, sorrel.

B. *Moderate oxalate content* (0.02%–0.1%); to be taken sparingly. Beans, cabbage, celery, dandelion, endive, okra, onions, green peppers, sweet potatoes, blackberries, raspberries, gooseberries, strawberries, red currants, grapes, lemon and lime peel, oranges, coffee, tomatoes, rutabagas, broccoli, Brussels sprouts, most types of plums.

C. *Little or no oxalate content* (less than 0.02%). Sugars, fats, starches, cauliflower, watercress, cucumbers, radishes, peas, apples, avocadoes, green squash, turnips, cherries, grape fruit, lemon and lime juice, mangoes, melons, nectarines, greengage plums.

Toxicity of Plastics

Q.—*I have frequent inquiries from workers in "bakelite" who say that their occupation is causing affections of the throat, such as laryngitis and pharyngitis, cough, and loss of appetite. Is there any factual basis for these complaints?*

A.—The finished inert plastic material seldom gives rise to irritation, but the reactive raw materials from which the plastic is formed may do so. Synthetic plastics are produced largely in enclosed systems which, under normal operative conditions, protect workers from harmful exposure. In the case of bakelite the raw materials used are phenol (carbolic acid) and formaldehyde, both of which, and particularly the latter, are irritant to skin and mucous membranes. Formaldehyde, indeed, is a well-recognized cause of industrial dermatitis. Bronchitis and other forms of respiratory-tract inflammation may occur in hot moulding work with plastics owing probably to the evolution of unreacted formaldehyde or to slight decomposition of the plastic mass. The following references to literature may be of interest. (1) "Toxicity of Some of the Newer Plastics": A. G. Cranch, *Industr. Med.*, 1946, **15**, 168. (2) "Practical Experiences with Dangers and Illness from Plastics": C. Scott McKinley, *Industr. Med.*, 1947, **16**, 432. (3) "Effects of Synthetic Resins": *J. Amer. med. Ass.* (*Queries*), 1941, **117**, 2018. (4) "Effects of Fumes During the Moulding of Certain Types of Plastics": E. W. Krans, *Industr. Med.*, 1935, **4**, 10. (5) "A Case of Poisoning Caused by Artificial Resin": Kranenburg, I.L.O. Studies and Reports Series F. (Ind. Hyg.), No. 10, 1926, p. 74. *Abs. J. industr. Hyg.*, 1927, **9**, 183.

Learning to Read

Q.—*What are the factors leading to the normal development of reading ability? If the ability to read does not develop normally, what are the possible causes?*

A.—A large-scale investigation by Burt, to which reference is made in his book, *Mental and Scholastic Tests* (1927), showed that most children can read four-letter words and a few words of five and six letters by the time they have passed their sixth birthday. Some children reach this standard at an earlier age. A child whose home favours the enjoyment of books may develop a very early interest in reading. There are children under 5 who read for their own enjoyment. Others, though of average or even high intelligence, may not master the elements of reading until relatively late.

Lateness in learning to read may be due to one or more of a variety of causes. (1) The possibility of some hitherto undiscovered defect of sight or of hearing should not be overlooked. (2) If a child's speech is defective for his age this may make the process of learning to read more difficult. He learns to read not only by seeing the printed symbol and hearing the spoken word but also by saying the word himself. Failure to pronounce all the vowels and consonants clearly and correctly introduces confusion and bewilderment into the process of

learning to read. (3) An attempt to teach the child to read may have been made at too early an age, before it is ready to learn. The child may react with a dislike, which it may be difficult to dispel later. Some educators hold that, unless the child shows eagerness to learn to read earlier, 6½ years is the most favourable age for beginning to learn the elements of reading. (4) Absences from school or a change of teacher, possibly implying also a change of method, are very likely to result in retardation. At present large numbers of children are in fact backward in reading and other school subjects as a consequence of the war years, which meant interrupted education for so many. (5) Possibly the child's first teacher was lacking in experience and skill and unable to make the process of learning interesting and pleasurable. Or the child may have reacted with fear and dislike to a teacher who was harsh or impatient. (6) While some young children in their eagerness to learn to read demand help of their parents, it is generally recognized that parents' attempts to help the unwilling child to learn are seldom successful. Children learn school subjects more readily from those who are not within the family circle. (7) Pressure by over-anxious parents and too frequent inquiry into progress tend to have the very opposite of the desired result. The child himself becomes so anxious and worried that he is not able to give his mind freely to the business of learning. As Schonell, one of the leading authorities on education, says in his book, *Backwardness in the Basic Subjects* (1942), "Learning to read . . . demands emotional and environmental experiences of the right kind." Experiences of the wrong kind result in emotional disturbances such as anxiety, resentment, insecurity, self-mistrust. A child thus disturbed is less able to learn than the child who is happy, confident, and secure.

Oestrogens and Malignancy

Q.—*Is there any reason—theoretical, experimental, or clinical—to believe that there is any danger of malignant growth occurring in the reproductive organs or elsewhere through the continued use of oestrin preparations to relieve menopausal symptoms? I am thinking of the minimal use of such products—for example, 0.5 mg. of hexoestrol daily for fourteen days after the period, or the date when the period was expected—and their discontinuance as soon as a reasonable feeling of well-being can be maintained without them.*

A.—There is no clinical evidence whatsoever to indicate that any such danger exists. There is some theoretical evidence in mice that the incidence of carcinoma of the breast in a strain susceptible to carcinoma can be increased by the use of oestrogens, but the dose is relatively far in excess of anything used clinically. In the opinion of the writer, therefore, there is no such contraindication, experimental or clinical, to the use of therapeutic doses of oestrogens, either the natural or the synthetic products.

Whooping-cough

Q.—(*a*) *Is bacteriological examination of the sputum of suspected cases of whooping-cough of any value in diagnosis? Early cases, mild cases, and patients who have been immunized against pertussis are all most difficult for the clinician. Are there any special precautions to be taken in collecting sputum for examination?*

(*b*) *Is there evidence of improvement in the condition of children with whooping-cough on injection of the usual immunizing vaccine after the infection is established? If improvement has been demonstrated, what would be the dosage for a child of 4 to 5 years?*

A.—(*a*) There are three methods in use for the bacteriological diagnosis of whooping-cough: the cough-plate held in front of the child's mouth during a bout of coughing; the post-nasal swab passed through the mouth and up behind the soft palate on to the posterior pharyngeal wall; or the per-nasal swab on fine flexible wire passed through the nose to the post-nasal space. In young children the last of these procedures is the easiest to perform and gives the best results. Bacteriological examination is most likely to give positive findings with patients in the early paroxysmal stage of infection. The doctor should consult the public health laboratory about outfits and details of technique. The swab should reach the laboratory within a few hours of being taken, and a positive report can be given within three to four days. Sputum, even if obtainable, is not suitable material for examination.

(*b*) The use of pertussis vaccines for the treatment of an established attack of whooping-cough is not likely to be beneficial, and when used in the late paroxysmal stage has apparently aggravated the illness. Danish doctors have, however, claimed good results from small repeated injections of vaccine given in the *early* stages of infection, and it is possible that such a course might stimulate the production of antibody more quickly than happens with the natural infection. Three or four doses of 0.1 ml. of pertussis vaccine at intervals of two to three days might be tried.

Vitamin D and Lupus Vulgaris

Q.—*Have massive doses of vitamin D been proved effective in the treatment of lupus vulgaris? Can the patient be treated while at work; if not, what is the method of treatment? Will it entail incapacitation of the patient for any length of time?*

A.—This treatment is still in the experimental stage and should not be employed by those not familiar with the dangers of calciferol in large doses. Renal damage and serious metabolic disturbances are easily induced. The treatment should be undertaken only when facilities exist for regular estimation of renal function and of diffusible calcium levels in the blood. Some success has attended the use of this measure in lupus vulgaris, but it is too early to assess its place in therapy. A long article by G. B. Dowling, S. Gauvain, and D. E. Macrae on this subject appeared in the *Journal* of March 6 (p. 430) with some comment in a leading article on this and other papers (p. 455).

NOTES AND COMMENTS

Penicillin for Vincent's Angina.—Mr. JAMES CAMPBELL, L.D.S. (Tunbridge Wells), writes: I have read your adviser's reply on the treatment of Vincent's angina ("Any Questions?" June 19, p. 1220) with interest. I fully agree that penicillin therapy is the best treatment for this condition, but I suggest the work of D. A. Long has shown that very much larger doses of parenteral penicillin are required than your expert advises. Long has shown that a total dose of 1,000,000 units per day is required to sterilize the gum pockets and tonsil crypts. Finally, in my opinion, the parenteral administration of penicillin is better than local treatment, even for Vincent's infection of the gums. The former does not cause a secondary stomatitis or such a quick growth of penicillin-resistant organisms.

Purchase Tax on Drugs.—Mr. H. E. CHAPMAN, Secretary of The Proprietary Articles Trade Association, writes: During the debate on the committee stage of the Finance (No. 2) Bill on June 2, on amendments designed to exempt from purchase tax all drugs and medicines, Mr. Orbach (Willesden, E.), as reported in *Hansard* and on pages 1161–62 of the *British Medical Journal* for June 12, referred to a memorandum which, he stated, was issued by the Proprietary Articles Trade Association, and quoted extracts from the memorandum in question. As the remarks made by Mr. Orbach in the course of his contribution to the debate may have misled some of those who heard or subsequently read them, I wish to point out that the Proprietary Articles Trade Association ("The P.A.T.A.") has not issued any memorandum whatsoever regarding purchase tax on medicines, nor taken any active part in propaganda relating to the subject.

Correction.—In the article on "Benign Ulcers of the Greater Curvature" by Dr. Paul Cave in the *Journal* of June 19 the sentence which reads, "The distance of the ulcer from the pylorus varies between 1 and 5 cm. with an average of 3 cm.," (p. 1186) should have read, "The distance of the ulcer from the pylorus varies from 5 to 14 cm., with an average of 8 cm. The diameter of the ulcer varies between 1 and 5 cm. with an average of 3 cm."

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111 TELEGRAMS: *Aitiology, Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.
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